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Do Changes in the SG&A Ratio Provide Information About Changes in Future Earnings, Analyst Forecast Revisions, and Stock Returns?

Eugene Scott Johnson
University of Arkansas, Fayetteville

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By

Eugene S. Johnson
University of Florida
Bachelor of Science in Telecommunication, 1991
University of Florida
Bachelor of Science in Accounting, 1998
University of Florida
Master of Accountancy, 1998

August 2013
University of Arkansas

This dissertation is approved for recommendation to the Graduate Council.

Dissertation Director:

_____
Dr. Linda Myers

Dissertation Committee:

_____ _____
Dr. James Myers Dr. Gary Ferrier

ABSTRACT

In fundamental analysis, increases in the ratio of selling, general and administrative (SG&A) costs to sales (SG&A ratio) are viewed as negative signals about future firm performance. However, this interpretation focuses on the overall change in the SG&A ratio and ignores the underlying changes in the components of the ratio. For example, prior literature finds that the interpretation offered by fundamental analysis does not hold during periods of decreasing sales. I contend that a further partitioning of the full sample into subsamples representing all possible combinations of changes in the components of the SG&A ratio, and the ratio itself, will yield incremental information about future firm performance. Accordingly, I identify six subsamples representing these combinations of changes and examine whether they are incrementally informative about future earnings, analyst forecasts, and stock returns. I find that changes in the SG&A ratio in four of my six subsamples are associated with changes in future earnings, and that results from prior literature regarding periods of decreasing sales are driven by a specific set of circumstances. I also find that analysts do not always recognize the information in the signals and incorporate the information into their forecast revisions. Finally, I find that changes in the SG&A ratio in five of my six subsamples provide statistically significant information regarding future stock returns that is not subsumed by the information contained in forecast revisions.

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DEDICATION

To my wife, Ilene, your love and encouragement are the reasons I'm here, to Jacob and Elisabeth, for being the best children a father could hope to have, and to my parents, Eugene and Dinah Johnson, for all of their support over these past four years and throughout my life.

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1. Introduction

In fundamental analysis, increases in the ratio of selling, general and administrative (SG&A) costs to sales (SG&A ratio) are perceived as the inability of managers to control costs. This inefficiency is expected to negatively impact future performance (Lev and Thiagarajan 1993; Anderson et al. 2007). Alternatively, decreases in the SG&A ratio are interpreted as a sign of tight managerial control over costs and increased efficiency, which will lead to better future performance. However, empirical evidence does not generally support this view. For instance, Abarbanell and Bushee (1997) find no association between changes in the SG&A ratio and future earnings changes.

Anderson et al. (2007) examine this lack of association and explain that the expected impact of changes in the SG&A ratio, offered by fundamental analysis, is valid only if SG&A costs move proportionately with increases and decreases in sales. Because Anderson et al. (2003) find that SG&A costs decrease less when sales decrease than they increase when sales increase, Anderson et al. (2007) partition their sample into firm-years with increasing sales and firms with decreasing sales. They find that changes in the SG&A ratio are positively associated with future earnings when sales are increasing and negatively associated with future earnings when sales are decreasing. This partitioning of the sample into periods of increasing and decreasing sales provides new findings, however prior literature does not examine the implications of changes in both of the components of the SG&A ratio.

The SG&A ratio is affected by both sales and SG&A costs. In periods where both sales and SG&A costs move in the same direction (i.e., both increase or both decrease), the SG&A ratio can either increase or decrease because it is a function of the relative changes to the separate components. For instance, in a period where sales and SG&A costs both increase, if

sales increase by more than SG&A costs, then the SG&A ratio will decrease, and if sales increase by less than SG&A costs, then the SG&A ratio will increase. Because changes in the components of the SG&A ratio may be informative about future performance, in this study, I identify subsamples of firm-years with all possible combinations of changes in the SG&A ratio and its components, and I examine whether these changes provide information about future earnings, analyst forecast revisions, and stock returns.

Fundamental analysis is primarily concerned with examining specific financial statement items and ratios in an attempt to identify information useful for predicting future earnings and firm value. Changes in financial statement items and ratios are informative if they provide information beyond that contained in current earnings. Prior research finds that fundamental signals are incrementally informative about changes in future earnings, that analysts seem to understand these signals and incorporate the information into their forecasts, and that these signals are associated with future stock returns. However, evidence regarding the informativeness of changes in the SG&A ratio is mixed. Anderson et al. (2007) suggest that this may be attributable to conflicting information produced by the same signal in different circumstances. They test this theory and find that increases in the SG&A ratio signal higher future earnings in periods of increasing sales but signal lower future earnings in periods of decreasing sales, indicating that changes in the SG&A ratio provide different information in different circumstances. Given this, I investigate whether additional information about future earnings and firm value can be obtained by identifying all combinations of increasing versus decreasing sales, increasing versus decreasing SG&A costs, and increasing versus decreasing SG&A ratio.

In general, increasing sales is a favorable signal about firm performance. However, when sales increase, changes in the SG&A ratio are an ambiguous signal about firm performance. When increasing sales are accompanied by decreasing SG&A costs, current period earnings will be higher and may signal improving efficiency. However, decreasing SG&A costs may signal that managers are reducing expenses because they expect future demand to be lower.

There is an analogous ambiguity relating to changes in the SG&A ratio when sales are decreasing. Decreasing SG&A costs might be viewed as preferable to decreasing sales and increasing SG&A costs, but the perceived decrease in efficiency in this scenario could signal that managers expect higher future demand and are thus increasing SG&A expenditures.

These different scenarios make interpretation of changes in SG&A ratios difficult. For instance, soon after becoming the Chief Financial Officer of Best Buy, Sharon McCollam said, "early observations are that the SG&A infrastructure at Best Buy is too high" (Ryan 2013). Although sales are decreasing and Best Buy plans to cut $400 million from its SG&A expense, "it appears the cuts will only offset additional expenses Best Buy has to make to boost sales and compete with low-overhead online retailers" (Ryan 2013). The Best Buy situation is an example of a firm with decreasing sales and an increasing SG&A ratio, with the latter being a conscious decision made in an effort to improve future performance, rather than an example of a firm that has lost control of its spending. Without complete information regarding management's intentions, investors can be left with the difficult task of interpreting the changes on their own. It is unclear whether Best Buy's strategy will be successful, but it demonstrates the difficulty in interpreting changes in the SG&A ratio. In this study, I explore whether systematically partitioning the changes in the SG&A ratio and its components provides information useful for predicting changes in future earnings, analyst forecast revisions, and stock returns.

To conduct my analyses, I construct a sample of 38,737 firm-year observations from 1990 through 2010. I then partition the full sample into six mutually exclusive subsamples based on changes in the SG&A ratio, changes in sales, and changes in SG&A costs, from *t*-1 to *t*. Subsample 1 contains firm-year observations with a decreasing SG&A ratio, increasing sales, and increasing SG&A costs. Subsample 2 contains firm-year observations with a decreasing SG&A ratio, increasing sales, and decreasing SG&A costs. Subsample 3 contains firm-year observations with a decreasing SG&A ratio, decreasing sales, and decreasing SG&A costs. Subsample 4 contains firm-year observations with an increasing SG&A ratio, increasing sales, and increasing SG&A costs. Subsample 5 contains firm-year observations with an increasing SG&A ratio, decreasing sales, and increasing SG&A costs. Finally, Subsample 6 contains firm-year observations with an increasing SG&A ratio, decreasing sales, and decreasing SG&A costs. I then assess the associations between the changes in the SG&A ratio (for each of the six subsamples) and changes in future earnings, analyst forecast revisions, and stock returns.

I find that partitioning the full sample into these six mutually exclusive subsamples provides information about future earnings, analyst forecast revisions, and stock returns. Specifically, I find that increases in the SG&A ratio signal better future performance in Subsample 1 (decreasing SG&A ratio, increasing sales, and increasing SG&A costs) and Subsample 6 (increasing SG&A ratio, decreasing sales, and decreasing SG&A costs), which is counter to the maintained assumption under fundamental analysis – that an increase in the SG&A ratio represents decreasing efficiency and is a negative signal. I also find that increases in the SG&A ratio signal worse future performance in Subsample 2 (decreasing SG&A ratio, increasing sales, and decreasing SG&A costs) and Subsample 4 (increasing SG&A ratio, increasing sales, and increasing SG&A costs), which supports the assumption from fundamental

analysis – that increases in the SG&A ratio are a negative signal. I also find that changes in the SG&A ratio are not associated with future performance in Subsample 3 (decreasing SG&A ratio, decreasing sales, and decreasing SG&A costs) and Subsample 5 (increasing SG&A ratio, decreasing sales, and increasing SG&A costs). Finally, I find that for my three subsamples with decreasing sales (Subsample 3, Subsample 5 and Subsample 6), only Subsample 6 has a positive association between changes in the SG&A ratio and changes in future performance. These results extend Anderson et al. (2007), which finds that increases in the SG&A ratio signal better future performance in periods of decreasing sales, by suggesting that not all periods of decreasing sales provide the same information about future performance.

In tests related to analyst forecast revisions, I find that analysts seem to understand the information contained in changes in the SG&A ratio and incorporate this information into their forecast revisions in only two of my subsamples (Subsample 2 and Subsample 6). In Subsample 1 and Subsample 4, they do not appear to recognize the information provided by the change in the SG&A ratio, and they do not incorporate the information into their forecast revisions. Finally, in Subsample 3 and Subsample 5, they appear to make forecast revisions as though there is a relation between changes in the SG&A ratio and future performance, but there is no relation in these subsamples.

Finally, I find a negative relation between changes in the SG&A ratio and abnormal stock returns in Subsample 2, Subsample 3, and Subsample 4, and this relation is subsumed by the information contained in forecast revisions only in Subsample 2. I also find a positive relation between changes in the SG&A ratio and abnormal stock returns in Subsample 1 and Subsample 6, and neither of these relations are subsumed by the information contained in forecast revisions.

In Subsample 5, I find a negative relation between changes in the SG&A ratio and abnormal stock returns, but only when controlling for forecast revisions.

This study contributes to the stream of literature on fundamental analysis and SG&A costs by performing a more detailed breakdown of changes in the SG&A ratio and by demonstrating that this partitioning provides information about changes in future earnings, analyst forecast revisions, and future stock returns. These results should be of interest to investors because they reveal that the information content of changes in the SG&A ratio differs under different circumstances. Additionally, I demonstrate that changes in the SG&A ratio and its components can help to identify firms that will experience higher future earnings and higher future stock returns. Finally, my results should be of interest to accounting researchers considering the implications of changes in the SG&A ratio and examining the informativeness of fundamental signals.

My paper proceeds as follows. Section 2 reviews prior evidence from the fundamental analysis and SG&A costs literature. Section 3 describes my sample, variable definitions, and research design. Section 4 presents my empirical results. Section 5 concludes.

2. Background

Valuation research focuses on the use of accounting information to estimate firm value. According to Lee (1999, 415), "The essential task in valuation is forecasting." He continues, "Fundamental analysis may be viewed as the art of using existing information, such as historical statements, to make better forecasts." Penman (1992, 471) echoes this sentiment when he outlines the role of financial statement/fundamental analysis in empirical accounting research by

stating, "the task of research is to discover what information projects future earnings and, from a financial statement analysis point of view, what information in the financial statement does this."

Empirical research attempting to identify relevant financial statement information includes Ou and Penman (1989). They identify financial statement attributes that are associated with future payoffs and combine them into one "positive-value measure" (Ou and Penman 1989, 297). Lev and Thiagarajan (1993) extend this idea by identifying candidate fundamentals from the written pronouncements of financial analysts. They specifically search the *Wall Street Journal*, *Barron's, Value Line* publications on "quality of earnings," professional commentaries on corporate financial reporting and analysis, and newsletters of major securities firms commenting on the value-relevance of financial information.[1] They state that their search procedure, which is guided by theory and experts' judgment, is superior to the statistical search method used in Ou and Penman (1989). Abarbanell and Bushee (1997) use nine of the fundamentals identified by Lev and Thiagarajan (1993) and examine whether changes in nine of the fundamental signals are informative about subsequent earnings changes. They find that seven of the nine signals are significantly related to the one-year-ahead change in earnings. However, one of their signals that is not statistically significant is "selling and administrative expenses (S&A)."[2]

Anderson et al. (2007) examine this lack of statistical significance between SG&A costs and the one-year-ahead change in earnings and offer a possible explanation for this finding. They

[1] The twelve signals they identify are changes in inventory, changes in accounts receivable, changes in capital expenditures, changes in research and development, changes in gross margin, changes in sales and administrative expenses, changes in provision for doubtful receivables, changes in effective tax rate, changes in order backlog, changes in labor force, whether a firm uses LIFO or FIFO, and whether a firm has a qualified or unqualified audit opinion.
[2] Although Abarbanell and Bushee (1997) adopt the variable name "selling and administrative expenses (S&A)" from Lev and Thiagarajan (1993), their "S&A" contains the same information as my "SG&A."

note that fundamental analysis interprets an increase in the SG&A ratio as a negative signal about future profitability and firm value. However, findings in Anderson et al. (2003) point out that cost accounting relies on the fundamental assumption that the relation between cost and volume is symmetric for volume increases and decreases, but this assumption has never been empirically tested. They test this idea and find that SG&A costs increase more when sales increase than they decrease when sales decrease by an equivalent amount. They label this type of cost behavior "sticky," and find empirical support for the idea that "stickiness" is caused by managers recognizing that decreasing sales do not necessarily lead to permanent decreases in demand. Managers respond to this by maintaining costs, in the hope that sales rebound. Anderson et al. (2007) suggest that these "sticky costs" might offer an explanation for why increases in the SG&A ratio are not always a negative signal and why Abarbanell and Bushee (1997) find no association between changes in the SG&A ratio and the one-year-ahead change in earnings. Anderson et al. (2007) hypothesize that both the stickiness and the fixed nature of some costs could cause the SG&A ratio to increase when sales are decreasing. In cases where managers maintain costs hoping that sales rebound, an increase in the SG&A ratio might actually convey positive information about future performance, in direct contrast to the common assumption of fundamental analysis. Anderson et al. (2007) test this hypothesis and find that increases in the SG&A ratio when sales decrease signal better future performance.

This finding – that changes in the SG&A ratio provide different information in different circumstances – suggests that a partitioning of changes in the SG&A ratio and its components might provide information that signals better projections of future earnings and thus allows for more accurate assessments of firm value. Furthermore, by following the methodology in Abarbanell and Bushee (1997) and examining the direct relation between fundamental signals

and future earnings, I am able to assess how efficiently analysts use these signals. Finally, I can also test for associations between changes in the components of the SG&A ratio and future stock returns to determine whether changes in the components of the SG&A ratio convey value-relevant information beyond the information incorporated by analysts into their forecasts.

More recent studies in the SG&A costs literature stream include Kama and Weiss (2013), which suggests an alternative explanation for firm cost structures. They theorize that when managers face incentives to avoid losses and decreases in earnings, or feel pressure to meet or beat analysts' earnings forecasts, they will cut slack resources during times of decreasing sales, even if they believe the decrease in sales will be temporary. This decision would lessen the degree of cost stickiness, rather than induce it. They test this theory and find that when sales decrease, managers cut costs more aggressively in the presence of incentives to avoid losses, to avoid decreases in earnings, and to meet or beat analysts' earnings forecasts.

Similarly, Chen et al. (2012) explore alternative explanations for cost stickiness based on managerial incentives. They question whether SG&A costs asymmetry is positively associated with the agency problem and whether strong corporate governance mitigates the association. They find that cost asymmetry increases with managers' empire building incentives, and they suggest this is an alternative explanation to the sticky cost theory suggested by Anderson et al. (2003). Additionally, they find that the positive association between SG&A costs asymmetry and the agency problem is mitigated by the presence of strong corporate governance.

This stream of research suggests a continuing interest in cost structures, sticky costs, explanations for the asymmetric response and the information content of changes in the SG&A ratio. Additionally, the alternative explanations for cost stickiness suggest that different outcomes might arise in different circumstances, in which case, further examination and

partitioning of the SG&A costs signal is warranted. My study contributes to the SG&A costs literature by re-examining the findings from prior studies over a more recent sample period and by exploring firms with increasing versus decreasing SG&A ratios, increasing versus decreasing sales, and increasing versus decreasing SG&A costs, to increase our knowledge of the information content of changes in the SG&A ratio.

3. Sample, Variable Definitions, and Research Design

3.1 Sample

To examine the relation between changes in the components of the SG&A ratio and future earnings, analyst forecast revisions, and stock returns, I first identify all firm-year observations from the Compustat database between 1987 and 2011 with sufficient data available to calculate all required variables. I eliminate firms in the financial services industry (SIC codes 6000 to 6999) because of differences in interpreting financial reports between these industries and other industries (Subramanyam 1996). Because some variables require data from three years prior and one year ahead, I obtain a sample of 38,737 firm-year observations with an actual sample period of 1990 to 2010. I obtain forecast data from the Institutional Brokers' Estimate System (I/B/E/S) for the same sample period, and my sample for tests on analyst forecast revisions is 11,030 firm-year observations. Finally, I obtain data from the Center for Research in Securities Prices (CRSP) monthly files, and my sample for tests on annual stock returns is 11,929 firm-year observations. I also winsorize all variables at the top and bottom 1% of the distribution to eliminate extreme observations. I perform the multivariate analyses that follow using the maximum number of observations with complete data available for each test. Because of this, the number of observations varies across specifications.

Table 1 presents historical descriptive statistics for the SG&A ratio over the sample period. The full sample of 38,737 firm-year observations has a mean (median) SG&A ratio of 35.65% (25.21%) for 1990 to 2009, with a low mean (median) of 28.98% (22.41%) in 1994 (1994) and a high mean (median) of 42.65% (28.91%) in 2002 (2003).

[Insert Table 1 here]

Table 2 presents descriptive statistics for the SG&A ratio by industry. The industry classifications are based on the Fama-French 49 Industry Portfolios; however, there are only 46 industries in my sample because of the elimination of the three industry classifications in the financial services sector. The Computer Software industry has the most firm-year observations with 3,712, and the Tobacco industry has the least with 53. The highest mean SG&A ratio is 68.50% for the Pharmaceutical Products industry, and the lowest is 10.46% for the Shipping Containers industry. The highest median SG&A ratio is 57.87% for the Computer Software industry, and the lowest is 5.83% for the Coal industry.

[Insert Table 2 here]

For descriptive purposes, and for the multivariate tests that follow, I partition my full sample into various subsamples. Table 3 details the composition of these subsamples. I first partition the full sample into subsamples with increasing SG&A ratio (higher in *t* than in *t*-1) and decreasing SG&A ratio (lower in *t* than in *t*-1). The result is a near even split, with 19,316 firm-year observations with increasing SG&A ratio and 19,421 with decreasing SG&A ratio. Next, I partition the full sample into subsamples with increasing sales and decreasing sales. The split is approximately two-to-one, with 25,495 firm-year observations with increasing sales and 13,242 firm-year observations with decreasing sales. This breakdown allows me to replicate tests from Anderson et al. (2007) to determine whether the relations they identified are still present

over my more recent sample period. The third partition splits the full sample into subsamples with increasing levels of SG&A costs and decreasing SG&A costs. The split is also approximately two-to-one, with 25,971 firm-year observations with increasing SG&A costs and 12,766 firm-year observations with decreasing SG&A costs. This breakdown is new to the literature stream and is an intermediate step between prior literature specifications and my complete breakdown. Finally, I partition the full sample into six subsamples, based on all possible combinations of changes in the SG&A ratio and its components. Subsample 1 is composed of 11,552 firm-year observations with decreasing SG&A ratio, increasing sales and increasing SG&A costs from *t*-1 to *t*. Subsample 2 is composed of 4,359 firm-year observations with decreasing SG&A ratio, increasing sales and decreasing SG&A costs. Subsample 3 is composed of 3,510 firm-year observations with decreasing SG&A ratio, decreasing sales and decreasing SG&A costs. Subsample 4 is composed of 9,584 firm-year observations with increasing SG&A ratio, increasing sales and increasing SG&A costs. Subsample 5 is composed of 4,835 firm-year observations with increasing SG&A ratio, decreasing sales and increasing SG&A costs. Finally, Subsample 6 is composed of 4,897 firm-year observations with increasing SG&A ratio, decreasing sales and decreasing SG&A costs.

[Insert Table 3 here]

Table 4 presents descriptive statistics for all dependent and independent variables used in the multivariate analyses that follow, for the full sample and all subsamples detailed in Table 3.

[Insert Table 4 here]

3.2 Variable Definitions

[Insert Table 5 here]

3.3 Empirical Models

I follow a modified version of the model in Abarbanell and Bushee (1997) and estimate the following regressions to examine the relation between changes in the SG&A ratio and one-year-ahead earnings change ($CEPS1_{i,t}$) for my various specifications:

$$CEPS1_{i,t} = \alpha + \beta_1 \Delta SGA\_Ratio_{i,t} + \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (1)$$

$$CEPS1_{i,t} = \alpha + \beta_2 SS\_Inc\_Sales_{i,t} + \beta_3 SS\_Dec\_Sales_{i,t} + \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (2)$$

$$CEPS1_{i,t} = \alpha + \beta_4 SS\_Inc\_SGA_{i,t} + \beta_5 SS\_Dec\_SGA_{i,t} + \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (3)$$

$$CEPS1_{i,t} = \alpha + \beta_6 SS\_1_{i,t} + \beta_7 SS\_2_{i,t} + \beta_8 SS\_3_{i,t} + \beta_9 SS\_4_{i,t} + \beta_{10} SS\_5_{i,t} + \beta_{11} SS\_6_{i,t} + \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (4)$$

Equation (1) is a modified version of the equation used in Abarbanell and Bushee (1997). I eliminate the fundamental signals of Audit Qualification, because more than 99% of the observations have unqualified audit opinions, and Earnings Quality, because the data source has a high variability of number of observations by year, calling into question the reliability of the information provided. Equation (1) tests for a direct relation between changes in the SG&A ratio and one-year-ahead earnings. If β_1 is positive and significant, this suggests that a decrease in the SG&A ratio signals better future performance. If β_1 is negative and significant, this suggests that an increase in the SG&A ratio signals worse future performance. Equation (2) is a modified version of the equation used in Anderson et al. (2007) that tests for a relation between changes in the SG&A ratio and one-year-ahead earnings during periods of increasing sales and periods of decreasing sales and allows me determine whether the results in Anderson et al. (2007) still hold for my sample period. If β_2 is positive and significant, this suggests that a decrease in the SG&A ratio signals better future performance in periods of increasing sales. If β_2 is negative and

significant, this suggests that an increase in the SG&A ratio signals better future performance in periods of increasing sales. The coefficient β_3 is subject to the same interpretation but in periods of decreasing sales. Equation (3) extends prior literature by splitting the sample and testing for a relation between changes in the SG&A ratio and one-year-ahead earnings during periods of increasing SG&A costs levels and periods of decreasing SG&A costs levels. If β_4 is positive and significant, this suggests that a decrease in the SG&A ratio signals better future performance in periods of increasing SG&A costs levels. If β_4 is negative and significant, this suggests that an increase in the SG&A ratio signals better future performance in periods of increasing SG&A costs levels. The coefficient β_5 is subject to the same interpretation but in periods of decreasing SG&A costs levels. Equation (4) provides my contribution to the literature stream and partitions the full sample into subsamples based on all possible combinations of changes in the SG&A ratio and its components, to test for a relation between changes in the SG&A ratio and one-year-ahead earnings during these different types of periods. If β_6 is positive (negative) and significant, this suggests that an increase in the SG&A ratio signals better (worse) future performance during a period of decreasing SG&A ratio, increasing sales and increasing SG&A costs. If β_7 is positive (negative) and significant, this suggests that an increase in the SG&A ratio signals better (worse) future performance during a period of decreasing SG&A ratio, increasing sales and decreasing SG&A costs. If β_8 is positive (negative) and significant, this suggests that an increase in the SG&A ratio signals better (worse) future performance during a period of decreasing SG&A ratio, decreasing sales and decreasing SG&A costs. If β_9 is positive (negative) and significant, this suggests that an increase in the SG&A ratio signals better (worse) future performance during a period of increasing SG&A ratio, increasing sales and increasing SG&A costs. If β_{10} is positive (negative) and significant, this suggests that an increase in the SG&A ratio signals better (worse)

future performance during a period of increasing SG&A ratio, decreasing sales and increasing SG&A costs. Finally, if β_{11} is positive (negative) and significant, this suggests that an increase in the SG&A ratio signals better (worse) future performance during a period of increasing SG&A ratio, decreasing sales and decreasing SG&A costs.

I also estimate the following regressions to examine the relation between changes in the SG&A ratio and two-year-ahead earnings change ($CEPS2_{i,t}$) for my various specifications:

$$CEPS2_{i,t} = \alpha + \beta_1 \Delta SGA\_Ratio_{i,t} + \delta CEPS1_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (5)$$

$$CEPS2_{i,t} = \alpha + \beta_2 SS\_Inc\_Sales_{i,t} + \beta_3 SS\_Dec\_Sales_{i,t} + \delta CEPS1_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (6)$$

$$CEPS2_{i,t} = \alpha + \beta_4 SS\_Inc\_SGA_{i,t} + \beta_5 SS\_Dec\_SGA_{i,t} + \delta CEPS1_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (7)$$

$$CEPS2_{i,t} = \alpha + \beta_6 SS\_1_{i,t} + \beta_7 SS\_2_{i,t} + \beta_8 SS\_3_{i,t} + \beta_9 SS\_4_{i,t} + \beta_{10} SS\_5_{i,t} + \beta_{11} SS\_6_{i,t} + \delta CEPS1_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (8)$$

The interpretations of the coefficients follow those detailed for Equations (1) through (4), with the exception of testing for a relation between changes in the SG&A ratio from period t-1 to t and changes in earnings from period t+1 to t+2. This test examines whether any relations identified in Equations (1) through (5) are persistent into the subsequent period or whether changes in the SG&A ratio between t-1 and t have an effect on future earnings that is not fully realized in the first year after the change but becomes apparent in year two.

I follow a modified version of a model in Abarbanell and Bushee (1997) and estimate the following regressions to examine the relation between changes in the SG&A ratio and analyst forecast revisions ($FR_{i,t}$) for my various specifications:

$$FR_{i,t} = \alpha + \beta_1 \Delta SGA\_Ratio_{i,t} + \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (9)$$

$$FR_{i,t} = \alpha + \beta_2 SS\_Inc\_Sales_{i,t} + \beta_3 SS\_Dec\_Sales_{i,t} + \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (10)$$

$$FR_{i,t} = \alpha + \beta_4 SS\_Inc\_SGA_{i,t} + \beta_5 SS\_Dec\_SGA_{i,t} + \delta CEPS_{i,t} + \Sigma\gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (11)$$

$$FR_{i,t} = \alpha + \beta_6 SS\_1_{i,t} + \beta_7 SS\_2_{i,t} + \beta_8 SS\_3_{i,t} + \beta_9 SS\_4_{i,t} + \beta_{10} SS\_5_{i,t} + \beta_{11} SS\_6_{i,t} + \delta CEPS_{i,t} + \Sigma\gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (12)$$

Abarbanell and Bushee (1997) identify the fundamental signals, including SG&A ratio, in their models as those that analysts mention as most important when forming their annual forecasts. Unless analysts anticipate the information contained in the fundamental signals more than one year prior to the realization of the signals, then analyst forecast revisions should be related to the fundamentals in the same way they are related to future earnings changes. Therefore, if the coefficients are significant in the same direction as the tests examining the relation between changes in the SG&A ratio and one-year-ahead earnings, this suggests that analysts are using the information in the signals when calculating their forecast revisions. Alternatively, if the coefficients are significant and in the opposite direction, this suggests that analysts are interpreting the signal the opposite of what the new information suggests. If the coefficients are insignificant, it suggests that analysts are not using the information in the signals when calculating their forecast revisions.

Finally, I estimate the following regressions to examine the relation between changes in the SG&A ratio and buy-and-hold abnormal returns ($BHAR_{i,t}$) for my various specifications:

$$BHAR_{i,t} = \alpha + \beta_1 \Delta SGA\_Ratio_{i,t} + \delta CEPS_{i,t} + \Sigma\gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (13)$$

$$BHAR_{i,t} = \alpha + \beta_1 \Delta SGA\_Ratio_{i,t} + \delta CEPS_{i,t} + \Sigma\gamma_{ij} Other\ Signals_{ij} + \beta_{12} FR_{i,t} + \varepsilon_{i,t} \quad (14)$$

$$BHAR_{i,t} = \alpha + \beta_2 SS\_Inc\_Sales_{i,t} + \beta_3 SS\_Dec\_Sales_{i,t} + \delta CEPS_{i,t} + \Sigma\gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (15)$$

$$BHAR_{i,t} = \alpha + \beta_2 SS\_Inc\_Sales_{i,t} + \beta_3 SS\_Dec\_Sales_{i,t} + \delta CEPS_{i,t} + \Sigma\gamma_{ij} Other\ Signals_{ij} + \beta_{12} FR_{i,t} + \varepsilon_{i,t} \quad (16)$$

$$BHAR_{i,t} = \alpha + \beta_4 SS\_Inc\_SGA_{i,t} + \beta_5 SS\_Dec\_SGA_{i,t} + \delta CEPS_{i,t} + \Sigma\gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (17)$$

$$BHAR_{i,t} = \alpha + \beta_4 SS\_Inc\_SGA_{i,t} + \beta_5 SS\_Dec\_SGA_{i,t} + \delta CEPS_{i,t} + \Sigma\gamma_{ij} Other\ Signals_{ij} + \beta_{12} FR_{i,t} + \varepsilon_{i,t} \quad (18)$$

$$BHAR_{i,t} = \alpha + \beta_6 SS\_1_{i,t} + \beta_7 SS\_2_{i,t} + \beta_8 SS\_3_{i,t} + \beta_9 SS\_4_{i,t} + \beta_{10} SS\_5_{i,t} + \beta_{11} SS\_6_{i,t} + \delta CEPS_{i,t} + \Sigma\gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (19)$$

$$BHAR_{i,t} = \alpha + \beta_6 SS\_1_{i,t} + \beta_7 SS\_2_{i,t} + \beta_8 SS\_3_{i,t} + \beta_9 SS\_4_{i,t} + \beta_{10} SS\_5_{i,t} + \beta_{11} SS\_6_{i,t} + \delta CEPS_{i,t} + \Sigma\gamma_{ij} Other\ Signals_{ij} + \beta_{12} FR_{i,t} + \varepsilon_{i,t} \quad (20)$$

By estimating each specification both with and without analyst forecast revisions ($FR_{i,t}$), I can first test whether changes in the SG&A ratio are related to buy-and-hold abnormal returns during different types of periods, and I can also test whether investors are relying on analysts to properly communicate information contained within the fundamental signals and variables of interest. If the coefficients on my variables of interest remain significant in the presence of analyst forecast revisions, then this suggests that analysts do not fully impound the information contained in these variables, and further suggests that investors recognize this fact.

4. Empirical Results

4.1 The Relation between Changes in the SG&A Ratio and Future Earnings

In this section, I examine the relation between changes in the SG&A ratio and changes in both one-year-ahead and two-year-ahead changes in earnings. Table 6 presents results from regressions relating changes in the SG&A ratio to one-year-ahead changes in earnings. Equation (1) examines the relation between changes in the SG&A ratio and one-year-ahead earnings changes for all firm-year observations in all types of periods. The coefficient for *ΔSGA_Ratio* is positive and significant at the 1% level, suggesting that increases in the SG&A ratio signal higher one-year-ahead earnings changes, or in other words, better future performance. This result

is not consistent with the customary interpretation of the SG&A signal, which predicts that an increasing SG&A ratio should signal worse future performance. I also find significance where Abarbanell and Bushee (1997) do not; however, my sample is much larger and covers a different period of time, which could signal a shift in the interpretation of the SG&A ratio is necessary for more recent years. Equation (2) examines whether changes in the SG&A ratio have different information properties in periods where sales are increasing and periods where sales are decreasing. The coefficient on *SS_Inc_Sales* is not statistically significant, which indicates that changes in the SG&A ratio during periods of increasing sales are not associated with one-year-ahead changes in earnings. However, the coefficient on *SS_Dec_Sales* is positive and significant at the 1% level, suggesting that increases in the SG&A ratio during periods of decreasing sales signal better future performance. This is consistent with the findings of Anderson et al. (2007). Equation (3) examines whether changes in the SG&A ratio have different information properties in periods of increasing SG&A costs and periods of decreasing SG&A costs. The coefficient on *SS_Inc_SG&A* is not statistically significant, which indicates that changes in the SG&A ratio during periods of increasing SG&A costs are not associated with one-year-ahead changes in earnings. The coefficient on *SS_Dec_SG&A* is positive and significant at the 1% level, suggesting that increases in the SG&A ratio signal better future performance in periods of decreasing SG&A costs. Finally, Equation (4) examines whether changes in the SG&A ratio have different information properties during periods with different combinations of changes in the SG&A ratio, sales, and SG&A costs, as represented by my six subsamples. The coefficient on *SS_1* is positive and significant at the 1% level, indicating that increases in the SG&A ratio are associated with higher one-year-ahead changes in earnings in periods where the SG&A ratio is decreasing, and both sales and SG&A costs are increasing. Once again, this is contradictory to

the general interpretation of the SG&A ratio in fundamental analysis. The coefficient on *SS_2* is negative and significant at the 1% level, indicating that increases in the SG&A ratio are associated with lower one-year-ahead changes in earnings during periods of decreasing SG&A ratio, increasing sales and decreasing SG&A costs. This finding is important, given that tests of periods split solely into increasing and decreasing sales find no association between changes in the SG&A ratio and future earnings, during periods of increasing sales. My results indicate that although periods of increasing sales alone do not provide statistically significant information about future earnings, the partitioning of increasing sales periods into those with increasing and decreasing SG&A costs does provide new information. While it is not surprising that periods of increasing sales and decreasing SG&A costs signal better future performance, this has not been documented in prior research. The coefficient on *SS_3* is not statistically significant, indicating that changes in the SG&A ratio during periods where the SG&A ratio, sales and SG&A costs are all decreasing, are not associated with one-year-ahead earnings change. The results of these three periods suggest that the presumption in fundamental analysis that decreases in the SG&A ratio represent "increasing efficiency," and therefore signal better future performance, is incorrect. The coefficient on *SS_4* is negative and significant at the 5% level, indicating that increases in the SG&A ratio are associated with lower one-year-ahead changes in earnings during periods where the SG&A ratio, sales and SG&A costs are all increasing. The coefficients on *SS_5* is statistically insignificant, indicating that changes in the SG&A ratio during periods of increasing SG&A ratio, decreasing sales and increasing SG&A costs are not associated with one-year-ahead earnings change. Finally, the coefficient on *SS_6* is positive and significant at 1% level, indicating that increases in the SG&A ratio are associated with higher one-year-ahead changes in earnings during periods of increasing SG&A ratio, decreasing sales and decreasing SG&A costs.

While the results presented for tests of periods of decreasing sales alone were consistent with the findings of Anderson et al. (2007), this full partitioning suggests that the results are being driven by periods of decreasing sales that also exhibit increasing SG&A ratio and decreasing SG&A costs. Or, in other words, periods where both sales and SG&A costs are decreasing, but sales are decreasing more, which is reasonably explained by the concept of cost stickiness. On the other hand, if sales are decreasing while SG&A costs are increasing or if SG&A costs are decreasing more than sales, there is no statistical expectation of better future performance.

[Insert Table 6 here]

Table 7 presents results from regressions relating changes in the SG&A ratio to two-year-ahead changes in earnings. These tests will allow me to determine whether any relations identified in Equations (1) through (4) are persistent into the subsequent period. Equation (5) examines the overall relation between changes in the SG&A ratio and two-year-ahead changes in earnings. The coefficient on *ΔSGA_Ratio* is positive and significant at the 1% level, suggesting that increases in the SG&A ratio signal higher two-year-ahead earnings changes, or in other words, better future performance. This is consistent with the relation between changes in the SG&A ratio and one-year-ahead changes in earnings, suggesting that this effect persists for at least two years. Equation (6) examines whether changes in the SG&A ratio have different information properties in periods where sales are increasing and periods where sales are decreasing. The coefficient on *SS_Inc_Sales* is not statistically significant, while the coefficient on *SS_Dec_Sales* is positive and significant at the 1% level. These results are consistent with the one-year-ahead results, suggesting that both effects persist for at least two years. Equation (7) examines whether changes in the SG&A ratio have different information properties in periods of increasing SG&A costs and periods of decreasing SG&A costs. The coefficient on

SS_Inc_SG&A is positive and significant at the 5% level, but the coefficient on *SS_Dec_SG&A* is not statistically significant. These results are flipped from the tests of one-year-ahead earnings, suggesting that a relation between changes in the SG&A ratio and future earnings in periods of increasing SG&A costs does not appear until year two, and the association in periods of decreasing SG&A costs only exists in year one and does not persist into year two. Finally, Equation (8) examines whether changes in the SG&A ratio have different information properties during periods with different combinations of changes in sales and SG&A costs, as represented by my six subsamples. The coefficients on *SS_1*, *SS_2*, *SS_3* and *SS_6* are all consistent with the associations identified on one-year-ahead earnings changes, indicating that the relations identified in year one persist at least into year two. However, the coefficient on *SS_4* is statistically insignificant, indicating that the effects of changes in the SG&A ratio do not persist into year two. Finally, the coefficient on *SS_5* is positive and significant at the 5% level, despite the fact that there was no relation between changes in the SG&A ratio and one-year-ahead earnings change.

[Insert Table 7 here]

4.2 The Relation between Changes in the SG&A Ratio and Analyst Forecast Revisions

In this section, I examine whether changes in the SG&A ratio are associated with analyst forecast revisions in the same way they are related to changes in future earnings. If analysts are using the information provided by the change in the SG&A ratio, then this symmetry will exist. Table 8 presents results from regressions relating changes in the SG&A ratio to one-year-ahead analyst forecast revisions. Equation (9) examines the overall relation between changes in the SG&A ratio and forecast revisions. The coefficient on *ΔSGA_Ratio* is positive and significant at the 1% level. This is consistent with the association between changes in the SG&A ratio and

one-year-ahead earnings changes, suggesting that analysts are correctly interpreting the signal and efficiently incorporating it into their forecast revisions. Equation (10) examines the relation in periods where sales are increasing and periods where sales are decreasing. The coefficients on *SS_Inc_Sales* and *SS_Dec_Sales* are statistically insignificant and positive and significant at the 1% level, respectively. This is also consistent with the association between the changes in the SG&A ratio and one-year-ahead changes in earnings for *SS_Inc_Sales* and *SS_Dec_Sales*. Once again, analysts are correctly interpreting the signal and incorporating the information into their forecast revisions. Equation (11) examines the relation in periods of increasing SG&A costs and periods of decreasing SG&A costs. The coefficient on *SS_Inc_SG&A* is positive and significant at the 1% level, and the coefficient on *SS_Dec_SG&A* is statistically insignificant. The coefficient on *SS_Inc_SG&A* suggests that analysts believe the signal is providing information, when tests for one-year-ahead earnings changes suggest there is not. Additionally, the coefficient on *SS_Dec_SG&A* suggests that they do not understand the information contained in the signal and fail to utilize it in their revisions. Finally, Equation (12) examines the relation between changes in the SG&A ratio and analyst forecast revisions during periods with different combinations of changes in the SG&A ratio, sales and SG&A costs, as represented by my six subsamples. The coefficients on *SS_2* and *SS_6* are consistent with the results from the tests on one-year-ahead earnings changes, suggesting that analysts correctly interpret the signals and incorporate the information into their forecast revisions for these two subsamples. The coefficients on *SS_1* and *SS_4* are statistically insignificant, which is inconsistent with the coefficients from the test on change in earnings, suggesting that analysts do not understand that the signals in these subsamples are providing information, and they do not incorporate the information into their revisions. Finally, the coefficients on *SS_3* and *SS_5* are negative and

significant at the 1% level and positive and significant at the 1% level, respectively, despite the fact that tests on changes in earnings for these two subsamples indicate no association. This suggests that analysts incorrectly believe the signals are providing information, when they are not, and making forecast revisions based on this faulty belief.

[Insert Table 8 here]

4.3 The Relation between Changes in the SG&A Ratio and Stock Returns

In this section, I examine whether changes in the SG&A ratio are associated with 12-month buy-and-hold abnormal returns. I run each regression twice, first with my variable(s) of interest and the fundamental signals, and then again with my variable(s) of interest, the fundamental signals and analyst forecast revisions. The first specification examines whether changes in efficiency are related to stock returns, and the second specification examines whether any associations hold in the presence of the forecast revisions or whether they are subsumed by the revisions. Table 9 presents results from regressions relating changes in the SG&A ratio to buy-and-hold abnormal stock returns. Equation (13) examines the overall relation between changes in the SG&A ratio and abnormal returns. The coefficient on *ΔSGA_Ratio* is statistically insignificant, indicating that changes in the SG&A ratio are not related to abnormal returns. However, in Equation (14), the coefficient is negative and significant at the 1% level, suggesting that increases in the SG&A ratio signal lower abnormal returns when controlling for forecast revisions, which also have a positive and significant coefficient. Equations (15) and (16) examine the relation in periods where sales are increasing and periods where sales are decreasing. The coefficient on *SS_Inc_Sales* is negative and significant at the 5% level in both equations, suggesting that increases in the SG&A ratio signal lower abnormal returns in periods of increasing sales. The coefficient on *SS_Dec_Sales* is statistically insignificant in both

equations, suggesting that changes in the SG&A ratio are not related to abnormal returns in periods of decreasing sales. Equations (16) and (17) examine the relation in periods of increasing SG&A costs and periods of decreasing SG&A costs. The coefficient on *SS_Inc_SG&A* is negative and significant at the 5% and 1% level, respectively, suggesting that increases in the SG&A ratio signal lower abnormal returns in periods of increasing SG&A costs. The coefficient on *SS_Dec_SG&A* is statistically insignificant in both equations, suggesting that changes in the SG&A ratio are not related to abnormal returns in periods of decreasing SG&A costs. Finally, Equations (19) and (20) examine the relation between changes in the SG&A ratio and abnormal returns during periods with different combinations of changes in efficiency, sales and SG&A costs, as represented by my six subsamples. The coefficients on *SS_1* and *SS_6* are positive and significant for both Equation (19) and Equation (20), suggesting that increases in the SG&A ratio signal higher abnormal returns in periods when the SG&A ratio is decreasing, sales are increasing and SG&A costs are increasing and when the SG&A ratio is increasing, sales are decreasing and SG&A costs are decreasing, and the relations are not subsumed by the information contained in forecast revisions. The coefficients on *SS_3* and *SS_4* are negative and significant for both Equation (19) and Equation (20), suggesting that increases in the SG&A ratio lead to lower abnormal returns in periods when the SG&A ratio, sales and SG&A costs are either all increasing or all decreasing, and the relations are not subsumed by the information contained in the forecast revisions. The coefficient on *SS_2* is negative and significant at the 5% level for Equation (19) but not statistically significant for Equation (20). This suggests that the apparent negative relationship between changes in the SG&A ratio and abnormal returns in periods of decreasing SG&A ratio, increasing sales and decreasing SG&A costs are actually due to the information contained in analyst forecast revisions. Finally, the coefficient on *SS_5* is

statistically insignificant for Equation (19) but negative and significant at the 5% level for Equation (20), suggesting that increases in the SG&A ratio signal lower abnormal returns in periods with increases in the SG&A ratio, decreases in sales and increases in SG&A costs when controlling for forecast revisions.

[Insert Table 9 here]

4.4 Additional Tests

Anderson et al. (2007) hypothesize that because cost stickiness causes an increase in the SG&A ratio in years with decreasing sales, the influence of these sticky costs will be higher in periods where the SG&A ratio is higher. I examine whether the relation between future earnings and changes in the SG&A ratio are more pronounced when the ratio is higher by partitioning each of my six subsamples into two groups. The first group contains firm-year observations that are below the median SG&A ratio for the respective subsample, and the second group is the firm-year observations above the median. I estimate the following regression to examine the relation between changes in the SG&A ratio and one-year-ahead earnings change ($CEPS1_{i,t}$) for firm-year observations with lower and higher SG&A ratios for each subsample:

$$\begin{aligned} CEPS1_{i,t} = \alpha &+ \beta_{13} SS\_1\_Lower\_Ratio_{i,t} + \beta_{14} SS\_1\_Higher\_Ratio_{i,t} \\ &+ \beta_{15} SS\_2\_Lower\_Ratio_{i,t} + \beta_{16} SS\_2\_Higher\_Ratio_{i,t} \\ &+ \beta_{17} SS\_3\_Lower\_Ratio_{i,t} + \beta_{18} SS\_3\_Higher\_Ratio_{i,t} \\ &+ \beta_{19} SS\_4\_Lower\_Ratio_{i,t} + \beta_{20} SS\_4\_Higher\_Ratio_{i,t} \\ &+ \beta_{21} SS\_5\_Lower\_Ratio_{i,t} + \beta_{22} SS\_5\_Higher\_Ratio_{i,t} \\ &+ \beta_{23} SS\_6\_Lower\_Ratio_{i,t} + \beta_{24} SS\_6\_Higher\_Ratio_{i,t} \\ &+ \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \end{aligned} \quad (21)$$

If the hypothesis in Anderson et al. (2007) is correct, then I should find positive and significant coefficients for β_{18}, β_{22} and β_{24}, which represent the firm-year observations with SG&A ratios above the median for the three subsamples with decreasing sales. The coefficients for β_{17}, β_{21} and β_{23}, which represent the firm-year observations with SG&A ratios below the

median for the three subsamples with decreasing sales, should either be statistically insignificant or have smaller coefficients, if the hypothesis is true. Additionally, if observations with higher SG&A ratios are driving the results during periods of increasing sales, I should find more significant results for coefficients β_{14}, β_{16} and β_{20} than for coefficients β_{13}, β_{15} and β_{19}.

Inconsistent with the prediction of Anderson et al. (2007), out of the three subsamples with decreasing sales, I only find a positive and significant coefficient on β_{24}. However, the coefficient on β_{23} is also positive and significant and has a larger coefficient than β_{24} (0.1765 vs. 0.0016). Previous tests indicate that there is no statistically significant relation between changes in the SG&A ratio and one-year-ahead earnings change for Subsample 3, but I find that when bifurcating the subsample into higher and lower SG&A ratio the firm-year observations above the median have a negative and significant coefficient, which is opposite the prediction of Anderson et al. (2007). Additionally, the coefficients for high and low ratio on Subsample 5 (β_{21} and β_{22}) are both statistically insignificant, which also lends no support to the hypothesis. When examining the relation during periods of increasing sales, I only find the results being driven by observations with higher SG&A ratios in Subsample 2 (decreasing SG&A ratio, increasing sales and decreasing SG&A costs). The coefficient on β_{16} is negative and significant at the 1 percent level, while the coefficient on β_{15} is statistically insignificant, indicating that an increasing SG&A ratio signals worse future performance, but only for the observations in Subsample 2 that have SG&A ratios above the median. For Subsample 1 and Subsample 4, the results are actually driven by observations with SG&A ratios below the median. The coefficient on β_{13} is positive and significant at the 1 percent level, while the coefficient on β_{14} is insignificant, suggesting that the positive relation between changes in the SG&A ratio and one-year-ahead changes in earnings, during periods where the SG&A ratio is increasing and both sales and SG&A costs are

increasing, is attributable to firm-year observations with SG&A ratios below the median for the subsample. Similarly, the coefficient on β_{19} is negative and significant at the 1 percent level, while the coefficient on β_{20} is insignificant, suggesting that the negative relation between changes in the SG&A ratio and one-year-ahead changes in earnings, during periods where SG&A ratio, sales and SG&A costs are all increasing, is attributable to firm-year observations with SG&A ratios below the median for the subsample.

[Insert Table 10 here]

I also estimate the following regression to examine the relation between changes in the SG&A ratio and two-year-ahead earnings change ($CEPS2_{i,t}$) for firm-year observations with lower and higher SG&A ratios for each subsample:

$$\begin{aligned} CEPS2_{i,t} = \alpha &+ \beta_{13} SS\_1\_Lower\_Ratio_{i,t} + \beta_{14} SS\_1\_Higher\_Ratio_{i,t} \\ &+ \beta_{15} SS\_2\_Lower\_Ratio_{i,t} + \beta_{16} SS\_2\_Higher\_Ratio_{i,t} \\ &+ \beta_{17} SS\_3\_Lower\_Ratio_{i,t} + \beta_{18} SS\_3\_Higher\_Ratio_{i,t} \\ &+ \beta_{19} SS\_4\_Lower\_Ratio_{i,t} + \beta_{20} SS\_4\_Higher\_Ratio_{i,t} \\ &+ \beta_{21} SS\_5\_Lower\_Ratio_{i,t} + \beta_{22} SS\_5\_Higher\_Ratio_{i,t} \\ &+ \beta_{23} SS\_6\_Lower\_Ratio_{i,t} + \beta_{24} SS\_6\_Higher\_Ratio_{i,t} \\ &+ \delta CEPS1_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \end{aligned} \quad (22)$$

This test examines whether any relations identified in Equation (21) are persistent into the subsequent period or whether changes in the SG&A ratio, split at the median of the ratio itself, between *t*-1 and *t* have an effect on future earnings that is not fully realized in the first year after the change but becomes apparent in year two. For Subsample 1, Subsample 2, Subsample 3 and Subsample 6, the relations identified by Equation (21) all hold, indicating a persistence lasting at least two years. For Subsample 4 and Subsample 5, the relations identified by Equation (21) for the observations with SG&A ratios below the median both persist into year two; however, the two statistically insignificant coefficients for the observations with SG&A ratios above the median in year one become positive and significant in year two tests. This suggests

that increases in the SG&A ratio do lead to better future performance for observations with higher SG&A ratios in these two subsamples, but the effects do not become apparent until year two. Additionally, this adds some additional support to the hypothesis of Anderson et al. (2007) given that Subsample 4 is composed of firms with decreasing sales.

[Insert Table 11 here]

I also estimate the following regression to examine the relation between changes in the SG&A ratio and analyst forecast revisions ($FR_{i,t}$) for firm-year observations with lower and higher SG&A ratios for each subsample:

$$\begin{aligned} FR_{i,t} = \alpha &+ \beta_{13} SS\_1\_Lower\_Ratio_{i,t} + \beta_{14} SS\_1\_Higher\_Ratio_{i,t} \\ &+ \beta_{15} SS\_2\_Lower\_Ratio_{i,t} + \beta_{16} SS\_2\_Higher\_Ratio_{i,t} \\ &+ \beta_{17} SS\_3\_Lower\_Ratio_{i,t} + \beta_{18} SS\_3\_Higher\_Ratio_{i,t} \\ &+ \beta_{19} SS\_4\_Lower\_Ratio_{i,t} + \beta_{20} SS\_4\_Higher\_Ratio_{i,t} \\ &+ \beta_{21} SS\_5\_Lower\_Ratio_{i,t} + \beta_{22} SS\_5\_Higher\_Ratio_{i,t} \\ &+ \beta_{23} SS\_6\_Lower\_Ratio_{i,t} + \beta_{24} SS\_6\_Higher\_Ratio_{i,t} \\ &+ \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \end{aligned} \quad (23)$$

The test will examine whether analysts are using the information in the signals identified in Equation (21) when calculating their forecast revisions. If the coefficients are statistically significant in the same direction as the results from Equation (21) it indicates that analysts are able to interpret the signals correctly in the various subsamples for firm-years with ratios above and below the median and that they are utilizing the information in the signals when revising their forecasts. For Subsample 1, Subsample 2 and Subsample 4, all coefficients are consistent with the results from Equation (21), indicating that analysts understand the implications of changes in the SG&A ratio for these subsamples and incorporate the information into their forecast revisions. Interestingly, these are the three subsamples that represent all firm-year observations with increasing sales, suggesting that analysts are particularly good at interpreting the signals when sales are increasing. For Subsample 3, analysts seem to understand the signal

for observations with SG&A ratios above the median, but they also make forecast revisions for firms below the median in the same manner, even though the results from tests of one-year-ahead earnings suggest there is no statistically significant information provided by these signals. For Subsamples 5 and 6, analysts appear to completely misinterpret the signals. In particular, they make forecast revisions for both partitions of Subsample 5 as if the signal contains information, when it does not, and they ignore the information provided by the signals in Subsample 6, failing to incorporate it into their revisions. The three subsamples where they do not fully understand the signals represent all periods of decreasing sales. This might not be a surprising result, in light of the results of Anderson et al. (2007), who find a positive relation between changes in the SG&A ratio and future performance. Their finding is the opposite of the prediction of fundamental analysis, and it appears that analysts may still subscribe to the beliefs of this type of analysis and do not understand the true meaning of the signals during periods of decreasing sales.

[Insert Table 12 here]

Finally, I estimate the following regressions to examine the relation between changes in the SG&A ratio and buy-and-hold abnormal returns ($BHAR_{i,t}$) for firm-year observations with lower and higher SG&A ratios for each subsample:

$$\begin{aligned} BHAR_{i,t} = {} & \alpha + \beta_{13} SS\_1\_Lower\_Ratio_{i,t} + \beta_{14} SS\_1\_Higher\_Ratio_{i,t} \\ & + \beta_{15} SS\_2\_Lower\_Ratio_{i,t} + \beta_{16} SS\_2\_Higher\_Ratio_{i,t} \\ & + \beta_{17} SS\_3\_Lower\_Ratio_{i,t} + \beta_{18} SS\_3\_Higher\_Ratio_{i,t} \\ & + \beta_{19} SS\_4\_Lower\_Ratio_{i,t} + \beta_{20} SS\_4\_Higher\_Ratio_{i,t} \\ & + \beta_{21} SS\_5\_Lower\_Ratio_{i,t} + \beta_{22} SS\_5\_Higher\_Ratio_{i,t} \\ & + \beta_{23} SS\_6\_Lower\_Ratio_{i,t} + \beta_{24} SS\_6\_Higher\_Ratio_{i,t} \\ & + \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \end{aligned} \quad (24)$$

$$\begin{aligned} BHAR_{i,t} = {} & \alpha + \beta_{13} SS\_1\_Lower\_Ratio_{i,t} + \beta_{14} SS\_1\_Higher\_Ratio_{i,t} \\ & + \beta_{15} SS\_2\_Lower\_Ratio_{i,t} + \beta_{16} SS\_2\_Higher\_Ratio_{i,t} \\ & + \beta_{17} SS\_3\_Lower\_Ratio_{i,t} + \beta_{18} SS\_3\_Higher\_Ratio_{i,t} \\ & + \beta_{19} SS\_4\_Lower\_Ratio_{i,t} + \beta_{20} SS\_4\_Higher\_Ratio_{i,t} \\ & + \beta_{21} SS\_5\_Lower\_Ratio_{i,t} + \beta_{22} SS\_5\_Higher\_Ratio_{i,t} \\ & + \beta_{23} SS\_6\_Lower\_Ratio_{i,t} + \beta_{24} SS\_6\_Higher\_Ratio_{i,t} \end{aligned}$$

$$+ \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \beta_{12} FR_{i,t} + \varepsilon_{i,t} \quad (25)$$

By estimating each specification both with and without analyst forecast revisions ($FR_{i,t}$), I can first test whether changes in the SG&A ratio are related to buy-and-hold abnormal returns for my various subsamples partitioned into firm-year observations below and above the median SG&A ratio, and I can also test whether investors are relying on analysts to properly communicate information contained within the fundamental signals and variables of interest. If the coefficients on my variables of interest remain significant in the presence of analyst forecast revisions, then this suggests that analysts do not fully impound the information contained in these variables, and further suggests that investors recognize this fact. For Subsample 1, I find that changes in the SG&A ratio are positively related to future stock returns for firm-year observations both above and below the median, but this relation is subsumed by forecast revisions for only those observations with SG&A ratios above the median. For Subsample 2, I find that changes in the SG&A ratio are negatively related to future stock returns for firm-year observations above the median, but are not related to returns for firms below the median. However the relation for observations above the median is subsumed by forecast revisions. For Subsample 3, I find that changes in the SG&A ratio are negatively related to future stock returns for firm-year observations both above and below the median, and neither of these relations are subsumed by forecast revisions. For Subsample 4, I find that changes in the SG&A ratio are negatively related to future stock returns for firm-year observations both above and below the median, but this relation is subsumed by forecast revisions for only those observations with SG&A ratios above the median. For Subsample 5, I find that changes in the SG&A ratio are negatively related to future stock returns for firm-year observations above the median, but are

not related to returns for firms below the median. The relation for observations above the median is not subsumed by forecast revisions. For Subsample 6, I find that changes in the SG&A ratio are positively related to future stock returns for firm-year observations above the median, but are not related to returns for firms below the median. The relation for observations above the median is not subsumed by forecast revisions.

[Insert Table 13 here]

[Insert Table 14 here]

Next, I examine whether the relation between future earnings and changes in the SG&A ratio are more pronounced when the change in the SG&A ratio is higher by partitioning each of my six subsamples into two groups. The first group contains firm-year observations that are larger than the median change in the SG&A ratio for the respective subsample, and the second group is the firm-year observations smaller than the median. For Subsamples 1, 2 and 3, the first group is partitioned into smaller changes (less decreasing) and larger changes (more decreasing). For Subsamples 4, 5 and 6, the first group is smaller changes (less increasing) and larger changes (more increasing). This test will determine whether more extreme changes in the SG&A ratio are responsible for the results of previous tests, or whether less extreme changes are just as informative in their signals about future performance. I estimate the following regression to examine the relation between changes in the SG&A ratio and one-year-ahead earnings change ($CEPS1_{i,t}$) for firm-year observations with smaller and larger changes in the SG&A ratio for each subsample:

$$\begin{aligned} CEPS1_{i,t} = \alpha &+ \beta_{25} SS\_1\_Smaller\_Change_{i,t} + \beta_{26} SS\_1\_Larger\_Change_{i,t} \\ &+ \beta_{27} SS\_2\_Smaller\_Change_{i,t} + \beta_{28} SS\_2\_Larger\_Change_{i,t} \\ &+ \beta_{29} SS\_3\_Smaller\_Change_{i,t} + \beta_{30} SS\_3\_Larger\_Change_{i,t} \\ &+ \beta_{31} SS\_4\_Smaller\_Change_{i,t} + \beta_{32} SS\_4\_Larger\_Change_{i,t} \\ &+ \beta_{33} SS\_5\_Smaller\_Change_{i,t} + \beta_{34} SS\_5\_Larger\_Change_{i,t} \\ &+ \beta_{35} SS\_6\_Smaller\_Change_{i,t} + \beta_{36} SS\_6\_Larger\_Change_{i,t} \end{aligned}$$

$$+ \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (26)$$

If observations with larger changes in the SG&A ratio are driving the results, then I should see more significant results for coefficients $\beta_{26}, \beta_{28}, \beta_{30}, \beta_{32}, \beta_{34}$ and β_{36} than for coefficients $\beta_{25}, \beta_{27}, \beta_{29}, \beta_{31}, \beta_{33}$ and β_{35}. For Subsample 1, both the smaller and larger change samples are positive and significant at the 1 percent level, which is also consistent with the results when the subsample is not partitioned. Although both are statistically significant, the magnitude of the coefficient is larger for the partition with the smaller change in the SG&A ratio (1.7442) than the partition with the larger change (0.2008), suggesting that the smaller change partition has a greater impact on the results without partitioning. For Subsample 2, the smaller change sample is positive and significant at the 10 percent level, while the larger change sample is negative and significant at the 1 percent level. The negative and significant result is consistent with the result from the non-partitioned test, suggesting that the observations with larger changes in the SG&A ratio are driving the results during periods of decreasing SG&A ratio, increasing sales and decreasing SG&A costs. For Subsample 3, the partition for smaller change is negative and significant at the 1 percent level, while the partition for larger change is not statistically significant. The results for the non-partitioned test were also not statistically significant, suggesting that the partition for larger change is driving the results and masking the informative signal contained in the firm-year observations with smaller changes in the SG&A ratio during periods where the SG&A ratio, sales and SG&A costs are all decreasing. For Subsample 4, the smaller change sample is negative and significant at the 1 percent level, while the larger change sample is negative and significant at the 5 percent level. The negative and significant result is consistent with the result from the non-partitioned test. Although both are statistically significant, the magnitude of the coefficient is larger for the partition with the smaller change in the SG&A

ratio (-2.1925) than the partition with the larger change (-0.0295), suggesting that the smaller change partition has a greater impact on the results without partitioning. For Subsample 5, the partition for smaller change is negative and significant at the 1 percent level, while the partition for larger change is not statistically significant. The results for the non-partitioned test were also not statistically significant, suggesting that the partition for larger change is driving the results and masking the informative signal contained in the firm-year observations with smaller changes in the SG&A ratio during periods where the SG&A ratio is increasing, sales are decreasing and SG&A costs are increasing. Subsample 3 and Subsample 5 both contain observations with decreasing sales, which was the focus of Anderson et al. (2007). Although non-partitioned results in my study suggest that their results are driven by observations in periods when the SG&A ratio is increasing and both sales and SG&A costs are decreasing, it also appears that observations in my Subsamples 3 and 5 with less extreme changes in the SG&A ratio actually produce results opposite of the findings in Anderson et al. (2007). For Subsample 6, both the smaller and larger change samples are positive and significant at the 1 percent level, which is also consistent with the results when the subsample is not partitioned. Although both are statistically significant, the magnitude of the coefficient is larger for the partition with the smaller change in the SG&A ratio (0.5981) than the partition with the larger change (0.0016), suggesting that the smaller change partition has a greater impact on the results without partitioning.

[Insert Table 15 here]

I also estimate the following regression to examine the relation between changes in the SG&A ratio and two-year-ahead earnings change ($CEPS2_{i,t}$) for firm-year observations with smaller and larger changes in the SG&A ratios for each subsample:

$$CEPS2_{i,t} = \alpha + \beta_{25} SS\_1\_Smaller\_Change_{i,t} + \beta_{26} SS\_1\_Larger\_Change_{i,t} + \beta_{27} SS\_2\_Smaller\_Change_{i,t} + \beta_{28} SS\_2\_Larger\_Change_{i,t}$$

$$+ \beta_{29} SS\_3\_Smaller\_Change_{i,t} + \beta_{30} SS\_3\_Larger\_Change_{i,t}$$
$$+ \beta_{31} SS\_4\_Smaller\_Change_{i,t} + \beta_{32} SS\_4\_Larger\_Change_{i,t}$$
$$+ \beta_{33} SS\_5\_Smaller\_Change_{i,t} + \beta_{34} SS\_5\_Larger\_Change_{i,t}$$
$$+ \beta_{35} SS\_6\_Smaller\_Change_{i,t} + \beta_{36} SS\_6\_Larger\_Change_{i,t}$$
$$+ \delta CEPS1_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \quad (27)$$

This test examines whether any relations identified in Equation (26) are persistent into the subsequent period or whether relations with future earnings not present in the first year become apparent in year two. For Subsample 1, the relations identified by Equation (26) hold, indicating a persistence lasting at least two years during periods of decreasing SG&A ratio and increases in both sales and SG&A costs. For Subsample 2, the relation identified by Equation (26) for the observations with larger changes in the SG&A ratio persists into year two; however, the positive and significant coefficient for the observations with smaller changes in the SG&A ratio in year one become statistically insignificant in year two tests. For Subsample 3, the negative and significant relation identified by Equation (26) for the observations with smaller changes in the SG&A ratio becomes statistically insignificant in year two. Additionally, the coefficient on the partition with the larger change in the SG&A ratio that was statistically insignificant remains the same in year two. For Subsample 4, the negative and significant relation identified by Equation (26) for the observations with smaller changes in the SG&A ratio persists into year two; however, the negative and significant coefficient for the observations with larger changes in the SG&A ratio in year one become statistically insignificant in year two tests. For Subsample 5, the negative and significant relation identified by Equation (26) for the observations with smaller changes in the SG&A ratio becomes statistically insignificant in year two, indicating that the effect does no persist. Additionally, the statistically insignificant coefficient for the observations with larger changes in the SG&A ratio in year one become positive and significant at the 5 percent level in year two, suggesting that the effect does not

become apparent until the second year in periods where the SG&A ratio and SG&A costs are increasing and sales are decreasing *and* changes in the SG&A are more extreme. For Subsample 6, the positive and significant relation identified by Equation (26) for the observations with smaller changes in the SG&A ratio persists into year two; however, the positive and significant coefficient for the observations with larger changes in the SG&A ratio in year one become statistically insignificant in year two tests.

[Insert Table 16 here]

I also estimate the following regression to examine the relation between changes in the SG&A ratio and analyst forecast revisions ($FR_{i,t}$) for firm-year observations with smaller and larger changes in the SG&A ratio for each subsample:

$$\begin{aligned} FR_{i,t} = \alpha &+ \beta_{25} SS\_1\_Smaller\_Change_{i,t} + \beta_{26} SS\_1\_Larger\_Change_{i,t} \\ &+ \beta_{27} SS\_2\_Smaller\_Change_{i,t} + \beta_{28} SS\_2\_Larger\_Change_{i,t} \\ &+ \beta_{29} SS\_3\_Smaller\_Change_{i,t} + \beta_{30} SS\_3\_Larger\_Change_{i,t} \\ &+ \beta_{31} SS\_4\_Smaller\_Change_{i,t} + \beta_{32} SS\_4\_Larger\_Change_{i,t} \\ &+ \beta_{33} SS\_5\_Smaller\_Change_{i,t} + \beta_{34} SS\_5\_Larger\_Change_{i,t} \\ &+ \beta_{35} SS\_6\_Smaller\_Change_{i,t} + \beta_{36} SS\_6\_Larger\_Change_{i,t} \\ &+ \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \end{aligned} \quad (28)$$

The test will examine whether analysts are using the information in the signals identified in Equation (26) when calculating their forecast revisions. If the coefficients are statistically significant in the same direction as the results from Equation (26) it indicates that analysts are able to interpret the signals correctly in the various subsamples for firm-years with smaller and larger changes in the SG&A ratio and that they are utilizing the information in the signals when revising their forecasts. From Equation (26), I obtain significant results for ten out of the twelve samples when examining the relation between changes in the SG&A ratio and one-year-ahead earnings changes; however, results from Equation (28) indicate that analysts only interpret the signal correctly in five out of twelve samples. This suggests that analysts do not fully understand

that the magnitude of the change in the SG&A ratio plays an important role in predicting future performance. For Subsample 1, analysts correctly revise their forecasts upward as the ratio increases for the smaller change sample, but they do not seem to understand that the signal for the larger change partition also contains information, and they do not incorporate this information into their forecast revisions. For Subsample 2, analysts understand the implications of changes in the SG&A ratio for the larger change partition and revise their forecasts accordingly, but they do not revise their forecasts for the smaller change sample, even though Equation (26) indicates that the signal provides information. For Subsample 3, analysts revise their forecasts down as the SG&A ratio increases for both partitions, which is the correct interpretation for the smaller change sample, but Equation (26) indicates that the signal for the larger change sample does not actually contain information, and analysts behave as though it does provide information. For Subsample 4, Equation (26) indicates a negative and significant relation for both smaller and larger changes, but analysts only revise their forecasts accordingly for the smaller change partition, and they do not correctly interpret the signal for the larger change sample. For Subsample 5, analysts do not revise their forecasts for the smaller change sample, even though Equation (26) indicates they should, and they do revise their forecasts for the larger change partition, when results from tests on one-year-ahead earnings changes are statistically insignificant. For Subsample 6, Equation (26) suggests that analysts should be revising their forecasts upward with increases in the SG&A ratio for both the smaller and larger change samples, but they only understand the signal and revise correctly for the larger change partition and appear to ignore the information provided by the signal for the smaller change sample. Overall, the results from this test suggest that analysts do not do a very good job of

interpreting the relation between changes in the SG&A ratio and changes in future earnings when the ratio changes are partitioned by their magnitude.

[Insert Table 17 here]

Finally, I estimate the following regressions to examine the relation between changes in the SG&A ratio and buy-and-hold abnormal returns ($BHAR_{i,t}$) for firm-year observations with smaller and larger changes in the SG&A ratio for each subsample:

$$\begin{aligned} BHAR_{i,t} = \alpha &+ \beta_{25} SS\_1\_Smaller\_Change_{i,t} + \beta_{26} SS\_1\_Larger\_Change_{i,t} \\ &+ \beta_{27} SS\_2\_Smaller\_Change_{i,t} + \beta_{28} SS\_2\_Larger\_Change_{i,t} \\ &+ \beta_{29} SS\_3\_Smaller\_Change_{i,t} + \beta_{30} SS\_3\_Larger\_Change_{i,t} \\ &+ \beta_{31} SS\_4\_Smaller\_Change_{i,t} + \beta_{32} SS\_4\_Larger\_Change_{i,t} \\ &+ \beta_{33} SS\_5\_Smaller\_Change_{i,t} + \beta_{34} SS\_5\_Larger\_Change_{i,t} \\ &+ \beta_{35} SS\_6\_Smaller\_Change_{i,t} + \beta_{36} SS\_6\_Larger\_Change_{i,t} \\ &+ \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \varepsilon_{i,t} \end{aligned} \quad (29)$$

$$\begin{aligned} BHAR_{i,t} = \alpha &+ \beta_{25} SS\_1\_Smaller\_Change_{i,t} + \beta_{26} SS\_1\_Larger\_Change_{i,t} \\ &+ \beta_{27} SS\_2\_Smaller\_Change_{i,t} + \beta_{28} SS\_2\_Larger\_Change_{i,t} \\ &+ \beta_{29} SS\_3\_Smaller\_Change_{i,t} + \beta_{30} SS\_3\_Larger\_Change_{i,t} \\ &+ \beta_{31} SS\_4\_Smaller\_Change_{i,t} + \beta_{32} SS\_4\_Larger\_Change_{i,t} \\ &+ \beta_{33} SS\_5\_Smaller\_Change_{i,t} + \beta_{34} SS\_5\_Larger\_Change_{i,t} \\ &+ \beta_{35} SS\_6\_Smaller\_Change_{i,t} + \beta_{36} SS\_6\_Larger\_Change_{i,t} \\ &+ \delta CEPS_{i,t} + \Sigma \gamma_{ij} Other\ Signals_{ij} + \beta_{12} FR_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (30)$$

By estimating each specification both with and without analyst forecast revisions ($FR_{i,t}$), I can first test whether changes in the SG&A ratio are related to buy-and-hold abnormal returns for my various subsamples partitioned into firm-year observations with smaller and larger changes in the SG&A ratio, and I can also test whether investors are relying on analysts to properly communicate information contained within the fundamental signals and variables of interest. If the coefficients on my variables of interest remain significant in the presence of analyst forecast revisions, then this suggests that analysts do not fully impound the information contained in these variables, and further suggests that investors recognize this fact. For

Subsample 1, I find that changes in the SG&A ratio are positively related to future stock returns for firm-year observations with both smaller and larger changes in the ratio, and this relation is not subsumed by forecast revisions for either of the partitions. For Subsample 2, I find that changes in the SG&A ratio are negatively related to future stock returns for firm-year observations with both smaller and larger changes in the ratio, but this relation is subsumed by forecast revisions for the sample with larger changes in the SG&A ratio. For Subsample 3, I find that changes in the SG&A ratio are negatively related to future stock returns for firm-year observations with both smaller and larger changes in the ratio, and neither of these relations are subsumed by forecast revisions. For Subsample 4, I find that changes in the SG&A ratio are negatively related to future stock returns for firm-year observations with larger changes in the SG&A ratio but are not related to future stock returns for observations with smaller changes. Additionally, the relation for observations with larger changes is not subsumed by forecast revisions. For Subsample 5, I find that changes in the SG&A ratio are not related to future stock returns for firm-year observations with either smaller or larger changes in the ratio, but are negatively and significantly related for the observations with larger changes when controlling for forecast revisions. For Subsample 6, I find that changes in the SG&A ratio are positively related to future stock returns for firm-year observations with both smaller and larger changes in the ratio, and neither of these relations are subsumed by forecast revisions.

[Insert Table 18 here]

[Insert Table 19 here]

5. Conclusion

Fundamental analysis suggests that increases in the SG&A ratio represent decreases in efficiency and are indications that managers are not able to adequately control costs. Furthermore, this lack of control is a negative signal regarding future performance and firm value. Alternatively, decreases in the SG&A ratio are viewed as increases in efficiency and are a sign that managers are properly controlling costs. Therefore, this decrease is believed to be a positive signal regarding future performance and firm value.

In early empirical research, Abarbanell and Bushee (1997) examine the relation between changes in efficiency and one-year-ahead changes in earnings and find a statistically insignificant association. Anderson et al. (2007) draw on the earlier work in Anderson et al. (2003) that demonstrates SG&A costs do not decrease as much when revenue decreases as they increase when revenue increases and hypothesize that this could be the reason Abarbanell and Bushee (1997) do not find results. They test this theory and find that increases in the SG&A ratio signal higher future earnings during times of increasing sales and lower future earnings during times of decreasing sales. The partitioning of the full sample into periods of increasing and decreasing sales creates a new set of signals from the change in efficiency that is incrementally informative about changes in future earnings. Additionally, the results raise the possibility that increases in the SG&A ratio do not always represent loss of control over costs and a decline in efficiency, and likewise, a decrease in the SG&A ratio does not necessarily indicate better future performance. This suggests that a further partitioning of the SG&A ratio into finer changes in components may also provide additional information about future performance and firm value. In this study, I identify subsamples of firm-years representing all possible combinations of

changes in the SG&A ratio and its components, and I examine whether these changes provide information about future earnings, analyst forecast revisions, and future stock returns.

I find that the expectations of fundamental analysis, as they relate to changes in the SG&A ratio, do not always hold true. In fact, when I examine three different combinations of observations with decreases in the SG&A ratio, only one signals better future performance. Additionally, one of the sets of observations with increases in the SG&A ratio signal better future performance, which is also opposite the prediction of fundamental analysis. However, this does support the results of Anderson et al. (2007) who find that increases in the SG&A ratio signal better future performance in periods of decreasing sales, but also provides incremental informativeness by demonstrating that this only holds in periods when the SG&A ratio is increasing, sales are decreasing, and SG&A costs are decreasing. Additionally, I find that analysts understand the signal contained in changes in the SG&A ratio and incorporate the information into their forecast revisions for only two of my six subsamples. In the other four subsamples, they either incorrectly interpret the signal and do not incorporate it into their revisions, or they create revisions as though the signal contained information, when it does not. Finally, I find that in five of my six subsamples, the change in the SG&A ratio is statistically related to future abnormal returns, even when controlling for the information contained in forecast revisions.

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TABLE 1
Descriptive Statistics on Historical SG&A Ratio

	Firm-Year Observations	Mean SG&A Ratio	Median SG&A Ratio	Lower Quartile	Upper Quartile	Standard Deviation
1990	1,717	30.30%	23.66%	13.68%	37.91%	26.32%
1991	1,719	30.50%	23.97%	14.01%	37.82%	25.98%
1992	1,775	30.05%	23.29%	13.64%	36.73%	26.66%
1993	1,810	29.99%	23.35%	13.57%	36.67%	26.51%
1994	1,657	28.98%	22.41%	12.63%	35.16%	26.19%
1995	1,658	29.37%	22.53%	12.34%	35.55%	26.76%
1996	1,755	30.96%	22.92%	12.71%	36.90%	29.48%
1997	1,749	32.51%	23.82%	12.61%	38.81%	31.31%
1998	1,880	37.20%	26.39%	14.10%	44.18%	35.66%
1999	1,756	35.90%	24.74%	13.82%	41.13%	35.12%
2000	1,660	37.18%	24.59%	13.74%	42.77%	37.44%
2001	1,727	41.81%	27.19%	15.26%	51.42%	39.74%
2002	1,654	42.65%	28.87%	16.02%	55.65%	38.90%
2003	1,718	41.48%	28.91%	15.68%	53.60%	37.86%
2004	1,832	39.94%	27.85%	15.31%	50.17%	37.22%
2005	2,158	40.03%	27.83%	14.81%	49.46%	38.06%
2006	2,432	39.67%	26.88%	14.56%	49.41%	37.89%
2007	2,600	37.63%	26.32%	13.93%	47.19%	35.77%
2008	2,771	36.21%	26.00%	13.20%	45.80%	34.08%
2009	2,709	36.21%	26.30%	14.35%	45.55%	32.80%
Total	38,737	35.65%	25.21%	14.01%	43.10%	33.84%

TABLE 2
Descriptive Statistics on SG&A Ratio by Industry

Industry	Firm-Year Observations	Mean SG&A Ratio	Median SG&A Ratio
Agriculture	126	29.96%	26.44%
Aircraft	205	18.50%	13.84%
Apparel	655	28.93%	27.83%
Automobiles and Trucks	774	18.78%	12.80%
Beer & Liquor	184	37.29%	35.75%
Business Services	1,982	32.60%	24.28%
Business Supplies	656	17.00%	14.76%
Candy & Soda	124	33.34%	31.55%
Chemicals	866	30.60%	19.50%
Coal	113	13.67%	5.83%
Communication	1,177	37.20%	27.66%
Computer Software	3,712	63.12%	57.87%
Computers	1,324	48.39%	40.84%
Construction	489	14.94%	11.29%
Construction Materials	1,029	18.75%	16.01%
Consumer Goods	722	33.63%	31.09%
Defense	82	26.34%	16.05%
Electrical Equipment	774	36.08%	23.80%
Electronic Equipment	3,312	39.50%	30.45%
Entertainment	542	29.78%	21.95%
Fabricated Products	181	17.30%	15.67%
Food Products	819	23.26%	20.01%
Healthcare	511	31.98%	24.58%
Machinery	1,506	28.72%	22.58%
Measuring and Control Equipment	1,030	48.06%	39.52%
Medical Equipment	1,341	64.15%	49.77%
Miscellaneous	854	44.41%	26.90%
Non-Metallic and Industrial Metal Mining	323	24.22%	9.29%
Personal Services	432	32.98%	27.72%
Petroleum and Natural Gas	2,963	25.35%	12.04%
Pharmaceutical Products	1,571	68.50%	50.76%
Precious Metals	396	22.86%	12.80%
Printing and Publishing	362	36.32%	34.02%
Recreation	380	40.25%	30.69%
Restaurants, Hotels, Motels	669	17.28%	11.03%

TABLE 2 (Continued)
Descriptive Statistics on SG&A Ratio by Industry

Industry	Lower Quartile	Upper Quartile	Standard Deviation
Agriculture	13.60%	37.13%	25.25%
Aircraft	10.51%	20.00%	20.75%
Apparel	20.92%	35.37%	14.21%
Automobiles and Trucks	8.34%	17.89%	24.94%
Beer & Liquor	26.35%	40.34%	22.36%
Business Services	15.32%	38.58%	29.45%
Business Supplies	8.03%	23.29%	10.92%
Candy & Soda	29.54%	37.02%	12.94%
Chemicals	11.73%	30.58%	36.61%
Coal	4.89%	12.58%	20.55%
Communication	19.99%	42.45%	30.84%
Computer Software	37.00%	77.68%	35.73%
Computers	26.92%	58.04%	32.44%
Construction	7.92%	15.51%	17.78%
Construction Materials	9.66%	23.05%	15.83%
Consumer Goods	18.91%	41.16%	19.80%
Defense	10.41%	30.28%	26.71%
Electrical Equipment	18.19%	32.52%	35.93%
Electronic Equipment	20.21%	45.36%	32.16%
Entertainment	13.94%	34.55%	27.32%
Fabricated Products	11.25%	20.45%	9.95%
Food Products	8.74%	29.64%	20.67%
Healthcare	15.04%	37.01%	28.57%
Machinery	16.33%	32.00%	23.89%
Measuring and Control Equipment	29.60%	52.45%	31.72%
Medical Equipment	35.60%	77.73%	41.12%
Miscellaneous	14.90%	49.40%	45.23%
Non-Metallic and Industrial Metal Mining	5.49%	17.86%	39.79%
Personal Services	14.28%	47.94%	23.42%
Petroleum and Natural Gas	6.42%	24.01%	35.54%
Pharmaceutical Products	34.89%	93.94%	45.94%
Precious Metals	7.95%	21.05%	32.01%
Printing and Publishing	25.25%	41.90%	19.60%
Recreation	22.23%	40.14%	34.33%
Restaurants, Hotels, Motels	7.66%	19.83%	17.23%

TABLE 2 (Continued)
Descriptive Statistics on SG&A Ratio by Industry

Industry	Firm-Year Observations	Mean SG&A Ratio	Median SG&A Ratio
Retail	2,388	28.44%	25.88%
Rubber and Plastic Products	419	22.80%	18.79%
Shipbuilding, Railroad Equipment	62	11.82%	12.11%
Shipping Containers	123	10.46%	9.62%
Steel Works Etc	783	12.36%	7.18%
Textiles	233	14.80%	12.13%
Tobacco Products	53	34.11%	26.80%
Transportation	781	15.19%	11.07%
Utilities	139	27.47%	16.57%
Wholesale	1,570	22.88%	18.52%
Full Sample	38,737	35.65%	25.21%

TABLE 2 (Continued)
Descriptive Statistics on SG&A Ratio by Industry

Industry	Lower Quartile	Upper Quartile	Standard Deviation
Retail	20.48%	33.22%	16.21%
Rubber and Plastic Products	11.44%	25.55%	21.61%
Shipbuilding, Railroad Equipment	5.76%	15.35%	6.32%
Shipping Containers	6.54%	11.27%	10.40%
Steel Works Etc	4.96%	11.52%	18.86%
Textiles	8.39%	18.28%	8.61%
Tobacco Products	21.25%	36.88%	23.53%
Transportation	7.42%	15.38%	19.08%
Utilities	10.12%	21.54%	35.74%
Wholesale	9.27%	27.67%	21.72%
Full Sample	14.01%	43.10%	33.84%

TABLE 3 - Panel A
Full Sample, SG&A Ratio Subsample, Sales Subsample, and SG&A Costs Subsample Composition

	Full Sample	Increasing SG&A Ratio Subsample	Decreasing SG&A Ratio Subsample
SG&A Ratio		+	-
Sales			
SG&A Costs			
N	38,737	19,316	19,421

	Increasing Sales Subsample	Decreasing Sales Subsample	Increasing SG&A Costs Subsample	Decreasing SG&A Costs Subsample
SG&A Ratio				
Sales	+	-		
SG&A Costs			+	-
N	25,495	13,242	25,971	12,766

TABLE 3 - Panel B
Subsamples 1 through 6 Composition

	Subsample 1	**Subsample 2**	**Subsample 3**
SG&A Ratio	-	-	-
Sales	+	+	-
SG&A Costs	+	-	-
N	11,552	4,359	3,510

	Subsample 4	**Subsample 5**	**Subsample 6**
SG&A Ratio	+	+	+
Sales	+	-	-
SG&A Costs	+	+	-
N	9,584	4,835	4,897

TABLE 4 - Panel A
Descriptive Statistics of Full Sample and SG&A Ratio Subsample

	Full Sample	Increasing SG&A Ratio Subsample	Decreasing SG&A Ratio Subsample
CEPS	0.082	-0.002	0.165
CEPS1	0.057	0.066	0.047
CEPS2	0.032	0.037	0.027
FR	0.109	0.105	0.113
BHAR	-0.022	-0.025	-0.019
SG&A Ratio	0.357	0.374	0.339
ΔSG&A Ratio	0.173	0.494	-0.146
Sales	2035.010	2076.800	1993.450
ΔSales	93.170	46.974	139.116
SG&A	306.099	329.492	282.834
ΔSG&A	18.443	25.073	11.849
INV	203.825	216.407	191.310
ΔINV	-0.003	0.008	-0.013
AR	316.753	318.456	315.060
ΔAR	-0.004	0.004	-0.012
CAPX	145.635	147.571	143.709
ΔCAPX	0.400	0.352	0.448
GM	709.393	731.328	687.576
ΔGM	-0.001	-0.010	0.008
TR	0.167	0.124	0.209
ETR	-0.020	-0.029	-0.011
LF	-0.112	0.001	-0.224
LEV	0.449	0.452	0.446
ΔLEV	-0.018	0.002	-0.039
SG	-0.090	-0.222	0.042
N	38,737	19,316	19,421

TABLE 4 - Panel B
Descriptive Statistics of Sales Subsample and SG&A Costs Subsample

	Increasing Sales Subsample	Decreasing Sales Subsample	Increasing SG&A Costs Subsample	Decreasing SG&A Costs Subsample
CEPS	0.085	0.077	0.022	0.203
CEPS1	0.021	0.125	0.024	0.123
CEPS2	0.017	0.064	0.018	0.063
FR	0.086	0.172	0.082	0.191
BHAR	-0.069	0.101	-0.074	0.131
SG&A Ratio	0.325	0.418	0.337	0.396
ΔSG&A Ratio	-0.048	0.601	0.162	0.196
Sales	2204.500	1708.700	2190.520	1718.650
ΔSales	193.275	-99.564	165.260	-53.489
SG&A	335.321	249.839	335.287	246.721
ΔSG&A	32.229	-8.100	35.536	-16.332
INV	214.779	182.735	217.121	176.775
ΔINV	-0.010	0.012	-0.004	0.000
AR	327.305	296.438	331.204	287.355
ΔAR	-0.010	0.008	-0.006	0.000
CAPX	157.576	122.642	158.649	119.158
ΔCAPX	1.129	-1.004	1.081	-0.985
GM	789.088	555.956	781.267	563.173
ΔGM	0.008	-0.017	-0.002	0.001
TR	0.178	0.145	0.143	0.214
ETR	-0.009	-0.041	-0.015	-0.030
LF	-0.191	0.041	-0.126	-0.082
LEV	0.450	0.447	0.435	0.478
ΔLEV	-0.032	0.007	-0.014	-0.027
SG	0.027	-0.315	-0.047	-0.177
N	25,495	13,242	25,971	12,766

TABLE 4 - Panel C
Descriptive Statistics of Subsamples 1 through 6

	Subsample 1	Subsample 2	Subsample 3	Subsample 4	Subsample 5	Subsample 6
CEPS	0.075	0.288	0.307	0.003	-0.067	0.054
CEPS1	0.012	0.072	0.132	0.008	0.084	0.161
CEPS2	0.008	0.053	0.061	0.012	0.057	0.075
FR	0.077	0.176	0.234	0.073	0.128	0.177
BHAR	-0.080	0.060	0.205	-0.092	-0.005	0.141
SG&A Ratio	0.318	0.374	0.366	0.310	0.437	0.436
ΔSG&A Ratio	-0.115	-0.240	-0.130	0.119	0.912	0.817
Sales	2205.920	1406.200	2023.460	2565.860	1409.700	1778.290
ΔSales	231.041	77.838	-87.323	200.257	-61.280	-146.136
SG&A	319.140	176.414	295.505	427.099	191.878	274.335
ΔSG&A	30.829	-9.155	-24.535	52.739	12.683	-16.841
INV	212.909	122.325	205.898	259.082	144.009	204.369
ΔINV	-0.014	-0.020	-0.002	-0.001	0.015	0.018
AR	335.715	196.680	394.093	376.579	230.484	291.561
ΔAR	-0.015	-0.014	-0.002	-0.003	0.009	0.014
CAPX	162.005	105.108	131.429	176.102	116.035	122.869
ΔCAPX	1.206	0.069	-1.577	1.519	-0.087	-1.498
GM	778.108	434.931	703.376	963.399	427.789	576.834
ΔGM	0.006	0.021	-0.001	0.004	-0.031	-0.015
TR	0.208	0.185	0.241	0.138	-0.001	0.221
ETR	-0.008	-0.006	-0.025	-0.011	-0.039	-0.054
LF	-0.253	-0.284	-0.052	-0.073	0.072	0.076
LEV	0.410	0.503	0.497	0.476	0.417	0.442
ΔLEV	-0.045	-0.036	-0.025	-0.014	0.058	-0.022
SG	0.110	0.039	-0.179	-0.078	-0.360	-0.368
N	11,552	4,359	3,510	9,584	4,835	4,897

TABLE 4 - Panel D
Descriptive Statistics of Subsamples 1 through 3 Split by Lower and Higher SG&A Ratio

	SS1 Lower Ratio	SS1 Higher Ratio	SS2 Lower Ratio	SS2 Higher Ratio	SS3 Lower Ratio	SS3 Higher Ratio
CEPS	0.064	0.087	0.180	0.396	0.186	0.427
CEPS1	-0.001	0.025	0.035	0.108	0.093	0.171
CEPS2	0.001	0.015	0.041	0.067	0.060	0.063
FR	0.061	0.092	0.107	0.247	0.160	0.318
BHAR	-0.087	-0.074	0.026	0.092	0.188	0.222
SG&A Ratio	0.132	0.503	0.122	0.626	0.148	0.584
ΔSG&A Ratio	-0.109	-0.122	-0.208	-0.271	-0.141	-0.118
Sales	3161.310	1250.530	2210.950	601.825	3002.990	1043.930
ΔSales	329.867	132.215	131.483	24.218	-126.049	-48.597
SG&A	320.135	318.144	193.750	159.086	341.841	249.170
ΔSG&A	30.916	30.743	-10.513	-7.797	-28.259	-20.811
INV	297.275	128.543	184.813	59.864	317.446	94.350
ΔINV	-0.010	-0.018	-0.010	-0.031	-0.001	-0.002
AR	468.738	202.691	291.704	101.700	603.871	184.316
ΔAR	-0.013	-0.016	-0.007	-0.020	0.002	-0.005
CAPX	247.569	76.442	177.586	32.663	203.109	59.750
ΔCAPX	1.289	1.123	0.329	-0.191	-1.908	-1.247
GM	843.440	712.776	538.513	331.397	823.151	583.601
ΔGM	0.000	0.012	0.007	0.036	-0.006	0.003
TR	0.244	0.173	0.261	0.108	0.165	0.318
ETR	-0.007	-0.009	0.001	-0.013	-0.024	-0.025
LF	-0.217	-0.289	-0.172	-0.396	-0.027	-0.077
LEV	0.571	0.248	0.755	0.250	0.700	0.293
ΔLEV	-0.044	-0.045	0.017	-0.089	-0.049	-0.001
SG	0.097	0.123	0.014	0.064	-0.153	-0.205
N	5,776	5,776	2,179	2,180	1,755	1,755

TABLE 4 - Panel E
Descriptive Statistics of Subsamples 4 through 6 Split by Lower and Higher SG&A Ratio

	SS4 Lower Ratio	SS4 Higher Ratio	SS5 Lower Ratio	SS5 Higher Ratio	SS6 Lower Ratio	SS6 Higher Ratio
CEPS	0.012	-0.005	-0.045	-0.089	0.024	0.084
CEPS1	0.003	0.014	0.043	0.125	0.115	0.208
CEPS2	0.003	0.020	0.037	0.077	0.055	0.094
FR	0.062	0.082	0.107	0.150	0.132	0.231
BHAR	-0.077	-0.106	-0.004	-0.007	0.062	0.230
SG&A Ratio	0.144	0.477	0.149	0.724	0.167	0.706
ΔSG&A Ratio	0.110	0.128	0.288	1.535	0.160	1.473
Sales	3378.690	1753.040	2412.000	407.819	2939.550	617.512
ΔSales	252.079	148.434	-98.532	-24.043	-222.652	-69.652
SG&A	377.558	476.639	244.510	139.267	357.649	191.056
ΔSG&A	47.500	57.977	15.464	9.904	-20.218	-13.464
INV	334.869	183.294	239.378	48.679	339.959	68.834
ΔINV	-0.001	-0.001	0.009	0.020	0.013	0.023
AR	466.384	286.775	391.533	69.501	481.607	101.592
ΔAR	-0.003	-0.004	0.007	0.012	0.013	0.014
CAPX	240.024	112.180	203.169	28.936	213.183	32.591
ΔCAPX	1.188	1.850	0.104	-0.278	-1.775	-1.220
GM	935.368	991.430	628.636	227.026	793.966	359.790
ΔGM	0.002	0.006	-0.017	-0.045	-0.013	-0.017
TR	0.264	0.012	0.168	-0.170	0.234	0.208
ETR	-0.013	-0.008	-0.033	-0.045	-0.046	-0.062
LF	-0.076	-0.070	0.037	0.107	0.058	0.094
LEV	0.645	0.306	0.594	0.240	0.638	0.245
ΔLEV	0.028	-0.056	0.034	0.082	-0.050	0.007
SG	-0.064	-0.092	-0.263	-0.456	-0.289	-0.448
N	4,792	4,792	2,417	2,418	2,488	2,449

TABLE 4 - Panel F
Descriptive Statistics of Subsamples 1 through 3 Split by Smaller and Larger Change in the SG&A Ratio

	SS1 Smaller Change	SS1 Larger Change	SS2 Smaller Change	SS2 Larger Change	SS3 Smaller Change	SS3 Larger Change
CEPS	0.031	0.120	0.146	0.430	0.139	0.475
CEPS1	0.004	0.021	0.047	0.096	0.096	0.167
CEPS2	0.003	0.013	0.048	0.059	0.051	0.071
FR	0.061	0.100	0.113	0.263	0.200	0.285
BHAR	-0.067	-0.096	0.019	0.117	0.139	0.298
SG&A Ratio	0.283	0.353	0.282	0.466	0.325	0.406
ΔSG&A Ratio	-0.028	-0.203	-0.096	-0.383	-0.031	-0.228
Sales	2903.040	1508.800	1987.070	825.063	2908.400	1138.520
ΔSales	263.378	198.703	76.386	79.291	-113.842	-60.804
SG&A	486.734	151.546	284.361	68.418	452.585	138.426
ΔSG&A	43.275	18.384	-9.471	-8.839	-27.088	-21.982
INV	299.316	126.502	182.447	62.175	308.255	103.540
ΔINV	-0.003	-0.024	-0.006	-0.035	0.002	-0.005
AR	439.511	231.919	290.426	102.891	507.002	281.185
ΔAR	-0.004	-0.025	-0.001	-0.026	0.000	-0.004
CAPX	180.847	143.163	134.402	75.801	189.022	73.837
ΔCAPX	1.177	1.235	-0.289	0.427	-1.355	-1.800
GM	1119.230	436.991	658.207	211.553	1068.740	338.008
ΔGM	0.000	0.012	-0.002	0.045	-0.007	0.004
TR	0.251	0.166	0.260	0.109	0.213	0.270
ETR	-0.006	-0.010	-0.019	0.007	-0.038	-0.011
LF	-0.091	-0.415	-0.082	-0.486	-0.014	-0.090
LEV	0.425	0.394	0.632	0.373	0.616	0.377
ΔLEV	-0.046	-0.044	-0.082	0.010	-0.039	-0.011
SG	0.004	0.217	-0.045	0.123	-0.140	-0.218
N	5,776	5,776	2,180	2,179	1,755	1,755

TABLE 4 - Panel G
Descriptive Statistics of Subsamples 4 through 6 Split by Smaller and Larger Change in the SG&A Ratio

	SS4 Smaller Change	SS4 Larger Change	SS5 Smaller Change	SS5 Larger Change	SS6 Smaller Change	SS6 Larger Change
CEPS	0.012	-0.005	-0.037	-0.097	0.080	0.027
CEPS1	0.000	0.017	0.028	0.140	0.093	0.230
CEPS2	0.006	0.017	0.042	0.073	0.056	0.096
FR	0.065	0.083	0.110	0.154	0.135	0.231
BHAR	-0.060	-0.132	0.018	-0.037	0.119	0.168
SG&A Ratio	0.287	0.334	0.282	0.592	0.325	0.548
ΔSG&A Ratio	0.023	0.216	0.109	1.715	0.046	1.588
Sales	3503.550	1628.170	2147.990	671.105	2622.980	933.259
ΔSales	247.409	153.104	-60.813	-61.747	-158.568	-133.700
SG&A	597.427	256.770	303.559	80.150	436.803	111.801
ΔSG&A	60.804	44.673	13.901	11.465	-22.486	-11.193
INV	358.934	159.229	220.686	67.300	305.370	103.326
ΔINV	-0.001	-0.001	0.005	0.024	0.004	0.032
AR	518.030	235.129	367.884	93.027	436.747	146.316
ΔAR	-0.002	-0.005	0.000	0.019	0.002	0.026
CAPX	206.456	145.749	151.668	80.386	149.043	96.683
ΔCAPX	1.372	1.665	-0.167	-0.007	-1.732	-1.263
GM	1335.620	591.179	670.192	185.286	923.051	230.475
ΔGM	0.002	0.006	-0.005	-0.057	-0.005	-0.026
TR	0.194	0.081	-0.100	0.097	0.341	0.100
ETR	-0.007	-0.015	-0.042	-0.036	-0.028	-0.081
LF	-0.070	-0.076	0.002	0.143	0.000	0.151
LEV	0.464	0.487	0.490	0.343	0.546	0.337
ΔLEV	-0.032	0.004	0.012	0.104	-0.053	0.010
SG	-0.033	-0.123	-0.157	-0.562	-0.183	-0.553
N	4,792	4,792	2,418	2,417	2,449	2,448

TABLE 5
Definitions of Variables

Dependent Variables	Measurement
One-Year-Ahead Earnings Change ($CEPS1_{i,t}$)	[Adjusted Earnings Per $Share_{i,t+1}$ - Adjusted Earnings Per $Share_{i,t}$] / Adjusted Ending Stock $Price_{t-1}$
Two-Year-Ahead Earnings Change ($CEPS2_{i,t}$)	[Adjusted Earnings Per $Share_{i,t+2}$ - Adjusted Earnings Per $Share_{i,t+1}$] / Adjusted Ending Stock $Price_{t-1}$
One-Year-Ahead Analyst Forecast Revision ($FR_{i,t}$)	[(Consensus Analyst Forecast for t+1 Issued in t+1 - Adjusted Earnings Per $Share_{i,t}$) - (Consensus Analyst Forecast for t+1 Issued in t - Consensus Analyst Forecast for t Issued in t)] / Adjusted Ending Stock $Price_{t-1}$
Buy-and-Hold Abnormal Returns ($BHAR_{i,t}$)	Size adjusted, buy-and-hold abnormal return of firm i cumulated from the end of the third month after the fiscal year-end of year t through 12 subsequent months.

Fundamental Signals	Measurement
Current Year Earnings Change ($CEPS_{i,t}$)	[Adjusted Earnings Per $Share_{i,t}$ - Adjusted Earnings Per $Share_{i,t-1}$] / Adjusted Ending Stock $Price_{t-1}$
Change in Inventory ($\Delta INV_{i,t}$)	($Inventory_{i,t}$ / $Sales_{i,t}$) - ($Inventory_{i,t-1}$ / $Sales_{i,t-1}$)
Change in Accounts Receivable ($\Delta AR_{i,t}$)	(Accounts $Receivable_{i,t}$ / $Sales_{i,t}$) - (Accounts $Receivable_{i,t-1}$ / $Sales_{i,t-1}$)
Change in Capital Expenditures ($\Delta CAPX_{i,t}$)	(Firm Capital $Expenditures_{i,t}$ / Industry Capital $Expenditures_{i,t}$) - (Firm Capital $Expenditures_{i,t-1}$ / Industry Capital $Expenditures_{i,t-1}$)
Change in Gross Margin ($\Delta GM_{i,t}$)	(Gross $Margin_{i,t}$ / $Sales_{i,t}$) - (Gross $Margin_{i,t-1}$ / $Sales_{i,t-1}$)
Effective Tax Rate ($ETR_{i,t}$)	[(Average Tax Rate from t-3 to t-1 - Tax Rate in t) * $CEPS_{i,t}$]
Labor Force ($LF_{i,t}$)	[($Sales_{i,t-1}$ / # of $Employees_{i,t-1}$) - ($Sales_{i,t}$ / # of $Employees_{i,t}$)] / ($Sales_{i,t-1}$ / # of $Employees_{i,t-1}$)
Change in Leverage ($\Delta LEV_{i,t}$)	(Long Term $Debt_{i,t}$ / $Equity_{i,t}$) - (Long Term $Debt_{i,t-1}$ / $Equity_{i,t-1}$)
Sales Growth ($Growth_{i,t}$)	($Sales_{i,t}$ / $Sales_{i,t-1}$) - ($Sales_{i,t-1}$ / $Sales_{i,t-2}$)

TABLE 5 (Continued)
Definitions of Variables

Independent Variables of Interest	**Measurement**
Change in SG&A Ratio ($\Delta SGA\_Ratio_{i,t}$)	[(SG&A $Costs_{i,t}$ / $Sales_{i,t}$) - (SG&A $Costs_{i,t-1}$ / $Sales_{i,t-1}$)] / (SG&A $Costs_{i,t}$ / $Sales_{i,t}$)
Increasing Sales Subsample ($SS\_Inc\_Sales_{i,t}$)	Change in SG&A ratio when sales increase, and 0 otherwise.
Decreasing Sales Subsample ($SS\_Dec\_Sales_{i,t}$)	Change in SG&A ratio when sales decrease, and 0 otherwise.
Increasing SG&A Costs Subsample ($SS\_Inc\_SGA_{i,t}$)	Change in SG&A ratio when SG&A expense increases, and 0 otherwise.
Decreasing SG&A Costs Subsample ($SS\_Dec\_SGA_{i,t}$)	Change in SG&A ratio when SG&A expense decreases, and 0 otherwise.
Subsample 1 ($SS\_1_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales increase, and SG&A costs increase, and 0 otherwise.
Subsample 2 ($SS\_2_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales increase, and SG&A costs decrease, and 0 otherwise.
Subsample 3 ($SS\_3_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales decrease, and SG&A costs decrease, and 0 otherwise.
Subsample 4 ($SS\_4_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales increase, and SG&A costs increase, and 0 otherwise.
Subsample 5 ($SS\_5_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales decrease, and SG&A costs increase, and 0 otherwise.
Subsample 6 ($SS\_6_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales decrease, and SG&A costs decrease, and 0 otherwise.

TABLE 5 (Continued)
Definitions of Variables

Independent Variables of Interest	**Measurement**
Subsample 1 Lower SG&A Ratio ($SS\_1\_Lower\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales increase, and SG&A costs increase, *and* SG&A ratio is above the median for Subsample 1, and 0 otherwise.
Subsample 1 Higher SG&A Ratio ($SS\_1\_Higher\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales increase, and SG&A costs increase, *and* SG&A ratio is below the median for Subsample 1, and 0 otherwise.
Subsample 2 Lower SG&A Ratio ($SS\_2\_Lower\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales increase, and SG&A costs decrease, *and* SG&A ratio is above the median for Subsample 2, and 0 otherwise.
Subsample 2 Higher SG&A Ratio ($SS\_2\_Higher\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales increase, and SG&A costs decrease, *and* SG&A ratio is below the median for Subsample 2, and 0 otherwise.
Subsample 3 Lower SG&A Ratio ($SS\_3\_Lower\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales decrease, and SG&A costs decrease, *and* SG&A ratio is above the median for Subsample 3, and 0 otherwise.
Subsample 3 Higher SG&A Ratio ($SS\_3\_Higher\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales decrease, and SG&A costs decrease, *and* SG&A ratio is below the median for Subsample 3, and 0 otherwise.
Subsample 4 Lower SG&A Ratio ($SS\_4\_Lower\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales increase, and SG&A costs increase, *and* SG&A ratio is below the median for Subsample 4, and 0 otherwise.
Subsample 4 Higher SG&A Ratio ($SS\_4\_Higher\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales increase, and SG&A costs increase, *and* SG&A ratio is above the median for Subsample 4, and 0 otherwise.
Subsample 5 Lower SG&A Ratio ($SS\_5\_Lower\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales decrease, and SG&A costs increase, *and* SG&A ratio is below the median for Subsample 5, and 0 otherwise.
Subsample 5 Higher SG&A Ratio ($SS\_5\_Higher\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales decrease, and SG&A costs increase, *and* SG&A ratio is above the median for Subsample 5, and 0 otherwise.
Subsample 6 Lower SG&A Ratio ($SS\_6\_Lower\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales decrease, and SG&A costs decrease, *and* SG&A ratio is below the median for Subsample 6, and 0 otherwise.
Subsample 6 Higher SG&A Ratio ($SS\_6\_Higher\_Ratio_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales decrease, and SG&A costs decrease, *and* SG&A ratio is above the median for Subsample 6, and 0 otherwise.

TABLE 5 (Continued)
Definitions of Variables

Independent Variables of Interest	**Measurement**
Subsample 1 Smaller SG&A Ratio Change (*SS_1_Smaller_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales increase, and SG&A costs increase, *and* the change in the SG&A ratio is below the median for Subsample 1, and 0 otherwise.
Subsample 1 Higher SG&A Ratio Change (*SS_1_Higher_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales increase, and SG&A costs increase, *and* the change in the SG&A ratio is above the median for Subsample 1, and 0 otherwise.
Subsample 2 Smaller SG&A Ratio Change (*SS_2_Smaller_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales increase, and SG&A costs decrease, *and* the change in the SG&A ratio is below the median for Subsample 2, and 0 otherwise.
Subsample 2 Higher SG&A Ratio Change (*SS_2_Higher_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales increase, and SG&A costs decrease, *and* the change in the SG&A ratio is above the median for Subsample 2, and 0 otherwise.
Subsample 3 Smaller SG&A Ratio Change (*SS_3_Smaller_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales decrease, and SG&A costs decrease, *and* the change in the SG&A ratio is below the median for Subsample 3, and 0 otherwise.
Subsample 3 Higher SG&A Ratio Change (*SS_3_Higher_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio decreases, sales decrease, and SG&A costs decrease, *and* the change in the SG&A ratio is above the median for Subsample 3, and 0 otherwise.
Subsample 4 Smaller SG&A Ratio Change (*SS_4_Smaller_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales increase, and SG&A costs increase, *and* the change in the SG&A ratio is below the median for Subsample 4, and 0 otherwise.
Subsample 4 Higher SG&A Ratio Change (*SS_4_Higher_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales increase, and SG&A costs increase, *and* the change in the SG&A ratio is above the median for Subsample 4, and 0 otherwise.
Subsample 5 Smaller SG&A Ratio Change (*SS_5_Smaller_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales decrease, and SG&A costs increase, *and* the change in the SG&A ratio is below the median for Subsample 5, and 0 otherwise.
Subsample 5 Higher SG&A Ratio Change (*SS_5_Higher_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales decrease, and SG&A costs increase, *and* the change in the SG&A ratio is above the median for Subsample 5, and 0 otherwise.
Subsample 6 Smaller SG&A Ratio Change (*SS_6_Smaller_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales decrease, and SG&A costs decrease, *and* the change in the SG&A ratio is below the median for Subsample 6, and 0 otherwise.
Subsample 6 Higher SG&A Ratio Change (*SS_6_Higher_Change*$_{i,t}$)	Change in SG&A ratio when SG&A ratio increases, sales decrease, and SG&A costs decrease, *and* the change in the SG&A ratio is above the median for Subsample 6, and 0 otherwise.

TABLE 6 - Panel A
Regressions of One-Year-Ahead Change in EPS on Full Sample and Sales Subsamples

	EQ(1)	*EQ(2)*
DV = CEPS1		
Intercept	0.0484***	0.0482***
	(<.0001)	(<.0001)
ΔSGA_Ratio	0.0016***	
	(<.0001)	
SS_Inc_Sales		-0.0079
		(0.3535)
SS_Dec_Sales		0.0016***
		(<.0001)
CEPS	-0.0019	-0.0024
	(0.8330)	(0.7880)
ΔINV	-0.2251***	-0.2240***
	(<.0001)	(<.0001)
ΔAR	-0.0201	-0.0199
	(0.5154)	(0.5186)
ΔCAPX	-0.0004***	-0.0004***
	(<.0001)	(<.0001)
ΔGM	-0.1665***	-0.1661***
	(<.0001)	(<.0001)
ETR	-0.0497***	-0.0497***
	(<.0001)	(<.0001)
LF	-0.0357***	-0.0344***
	(<.0001)	(<.0001)
ΔLEV	-0.0015	-0.0015
	(0.1719)	(0.1719)
Growth	-0.0286***	-0.0289***
	(<.0001)	(<.0001)
N	38,737	38,737
Adj R^2	1.699%	1.713%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 6 - Panel B
Regressions of One-Year-Ahead Change in EPS on SG&A Costs Subsample and Subsamples 1 through 6

	EQ(3)	*EQ(4)*
DV = CEPS1		
Intercept	0.0483***	0.0516***
	(<.0001)	(<.0001)
SS_Inc_SG&A	0.0019	
	(0.1062)	
SS_Dec_SG&A	0.0015***	
	(<.0001)	
SS_1		0.1660***
		(<.0001)
SS_2		-0.0876***
		(0.0011)
SS_3		-0.0171
		(0.3515)
SS_4		-0.0216**
		(0.0430)
SS_5		0.0019
		(0.1086)
SS_6		0.0016***
		(0.0001)
CEPS	-0.0019	-0.0061
	(0.8314)	(0.5041)
ΔINV	-0.2252***	-0.2215***
	(<.0001)	(<.0001)
ΔAR	-0.0205	-0.0257
	(0.5067)	(0.4066)
ΔCAPX	-0.0004***	-0.0003***
	(<.0001)	(<.0001)
ΔGM	-0.1661***	-0.1681***
	(<.0001)	(<.0001)
ETR	-0.0497***	-0.0496***
	(<.0001)	(<.0001)
LF	-0.0357***	-0.0450***
	(<.0001)	(<.0001)
ΔLEV	-0.0015	-0.0014
	(0.1721)	(0.1802)
Growth	-0.0286***	-0.0259***
	(<.0001)	(<.0001)
N	38,737	38,737
Adj R^2	1.700%	1.998%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 7 - Panel A
Regressions of Two-Year-Ahead Change in EPS on Full Sample and Sales Subsample

	EQ(5)	*EQ(6)*
DV = CEPS2		
Intercept	0.0332***	0.0331***
	(<.0001)	(<.0001)
ΔSGA_Ratio	0.0008***	
	(0.0089)	
SS_Inc_Sales		-0.0055
		(0.4627)
SS_Dec_Sales		0.0008***
		(0.0086)
CEPS1	-0.0958***	-0.0958***
	(<.0001)	(<.0001)
ΔINV	0.0027	0.0035
	(0.9379)	(0.9210)
ΔAR	-0.0842***	-0.0840***
	(0.0018)	(0.0019)
ΔCAPX	-0.0003***	-0.0003***
	(<.0001)	(<.0001)
ΔGM	-0.0598***	-0.0598***
	(0.0029)	(0.0029)
ETR	-0.0239***	-0.0239***
	(0.0021)	(0.0021)
LF	-0.0111**	-0.0102*
	(0.0365)	(0.0614)
ΔLEV	-0.0004	-0.0004
	(0.6963)	(0.6951)
Growth	-0.0142***	-0.0143***
	(<.0001)	(<.0001)
N	33,232	33,232
Adj R^2	1.698%	1.700%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 7 - Panel B
Regressions of Two-Year-Ahead Change in EPS on SG&A Costs Subsample and Subsamples 1 through 6

	EQ(7)	*EQ(8)*
DV = CEPS2		
Intercept	0.0330***	0.0319***
	(<.0001)	(<.0001)
SS_Inc_SG&A	0.0024**	
	(0.0279)	
SS_Dec_SG&A	0.0006	
	(0.1330)	
SS_1		0.0381*
		(0.0962)
SS_2		-0.0929***
		(<.0001)
SS_3		-0.0077
		(0.2041)
SS_4		0.0058
		(0.4400)
SS_5		0.0023**
		(0.0305)
SS_6		0.0006*
		(0.0960)
CEPS1	-0.0959***	-0.0972***
	(<.0001)	(<.0001)
ΔINV	0.0016	0.0088
	(0.9637)	(0.8000)
ΔAR	-0.0859**	-0.0864***
	(0.0015)	(0.0014)
ΔCAPX	-0.0003***	-0.0003***
	(<.0001)	(<.0001)
ΔGM	-0.0590***	-0.0657***
	(0.0033)	(0.0011)
ETR	-0.0240***	-0.0242***
	(0.0020)	(0.0018)
LF	-0.0114**	-0.0099*
	(0.0322)	(0.0959)
ΔLEV	-0.0003	-0.0004
	(0.6973)	(0.6782)
Growth	-0.0140***	-0.0137***
	(<.0001)	(<.0001)
N	33,232	33,232
Adj R^2	1.722%	1.860%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 8 - Panel A
Regressions of Analyst Forecast Revisions on Full Sample and Sales Subsample

	EQ(9)	*EQ(10)*
DV = FR		
Intercept	0.1006***	0.1001***
	(<.0001)	(<.0001)
ΔSGA_Ratio	0.0280***	
	(0.0025)	
SS_Inc_Sales		-0.0061
		(0.8821)
SS_Dec_Sales		0.0321***
		(0.0005)
CEPS	0.2731***	0.2711***
	(<.0001)	(<.0001)
ΔINV	-0.0881	-0.0895
	(0.5326)	(0.5277)
ΔAR	0.0232	0.0214
	(0.8328)	(0.8463)
ΔCAPX	-0.0004***	-0.0004***
	(0.0022)	(0.0021)
ΔGM	-0.1726*	-0.1693*
	(0.0587)	(0.0633)
ETR	-0.0432	-0.0430
	(0.2303)	(0.2323)
LF	-0.0094	-0.0040
	(0.6782)	(0.8628)
ΔLEV	0.0027	0.0028
	(0.3719)	(0.3636)
GROWTH	0.0009	0.0010
	(0.9148)	(0.8967)
N	11,030	11,030
Adj R^2	2.438%	2.463%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 8 - Panel B
Regressions of Forecast Revisions on SG&A Costs Subsample and Subsamples 1 through 6

	EQ(11)	*EQ(12)*
DV = FR		
Intercept	0.1005***	0.0917***
	(<.0001)	(<.0001)
SS_Inc_SG&A	0.0311***	
	(0.0017)	
SS_Dec_SG&A	-0.0011	
	(0.9692)	
SS_1		-0.0081
		(0.9160)
SS_2		-0.3086***
		(0.0008)
SS_3		-0.6366***
		(0.0089)
SS_4		0.0325
		(0.5308)
SS_5		0.0322***
		(0.0005)
SS_6		0.0697*
		(0.0770)
CEPS	0.2715***	0.2415***
	(<.0001)	(<.0001)
ΔINV	-0.0783	-0.0772
	(0.5815)	(0.5844)
ΔAR	0.0303	0.0260
	(0.7821)	(0.8134)
ΔCAPX	-0.0004***	-0.0003**
	(0.0020)	(0.0114)
ΔGM	-0.1718***	-0.1527
	(0.0594)	(0.0943)
ETR	-0.0438	-0.0440
	(0.2234)	(0.2184)
LF	-0.0080	0.0065
	(0.7263)	(0.8060)
ΔLEV	0.0027	0.0026
	(0.3712)	(0.3859)
GROWTH	0.0000	0.0059
	(0.9996)	(0.4526)
N	11,030	11,030
Adj R^2	2.455%	2.954%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 9 - Panel A
Regressions of Buy and Hold Returns on Full Sample

	EQ(13)	*EQ(14)*
DV = BHAR		
Intercept	-0.0140*	-0.0324***
	(0.0552)	(<.0001)
ΔSGA_Ratio	-0.0201	-0.0354**
	(0.1860)	(0.0223)
CEPS	0.1388***	0.0742*
	(0.0002)	(0.0626)
ΔINV	-0.5666***	-0.8036***
	(0.0058)	(<.0001)
ΔAR	-0.0722	-0.1243
	(0.6512)	(0.4852)
ΔCAPX	-0.0013***	-0.0010***
	(0.0003)	(0.0036)
ΔGM	-0.2629**	-0.2553*
	(0.0329)	(0.0533)
ETR	0.0016	0.0199
	(0.9573)	(0.4732)
LF	0.1186***	0.1815***
	(0.0009)	(<.0001)
ΔLEV	0.0066*	0.0040
	(0.0568)	(0.2530)
GROWTH	0.0285	0.0473
	(0.4830)	(0.3184)
FR		0.1704***
		(<.0001)
N	11,929	10,565
Adj R^2	0.695%	1.854%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 9 - Panel B
Regressions of Buy and Hold Returns on Sales Subsample

	EQ(15)	*EQ(16)*
DV = BHAR		
Intercept	-0.0150**	-0.0332***
	(0.0399)	(<.0001)
SS_Inc_Sales	-0.0955**	-0.1002**
	(0.0196)	(0.0121)
SS_Dec_Sales	-0.0131	-0.0276
	(0.4813)	(0.1732)
CEPS	0.1341***	0.0704*
	(0.0004)	(0.0769)
ΔINV	-0.5676***	-0.8072***
	(0.0059)	(<.0001)
ΔAR	-0.0780	-0.1285
	(0.6270)	(0.4726)
ΔCAPX	-0.0013***	-0.0010***
	(0.0003)	(0.0036)
ΔGM	-0.2547**	-0.2488*
	(0.0388)	(0.0588)
ETR	0.0020	0.0201
	(0.9480)	(0.4688)
LF	0.1307***	0.1919***
	(0.0004)	(<.0001)
ΔLEV	0.0067*	0.0041
	(0.0534)	(0.2421)
GROWTH	0.0281	0.0476
	(0.4881)	(0.3155)
FR		0.1701***
		(<.0001)
N	11,929	10,565
Adj R^2	0.732%	1.885%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 9 - Panel C
Regressions of Buy and Hold Returns on SG&A Costs Subsample

	EQ(17)	*EQ(18)*
DV = BHAR		
Intercept	-0.0141*	-0.0324***
	(0.0535)	(<.0001)
SS_Inc_SG&A	-0.0269**	-0.0418***
	(0.0359)	(0.0007)
SS_Dec_SG&A	0.0630	0.0283
	(0.2995)	(0.6517)
CEPS	0.1435***	0.0779*
	(0.0002)	(0.0524)
ΔINV	-0.5944***	-0.8263***
	(0.0037)	(<.0001)
ΔAR	-0.0833	-0.1386
	(0.6042)	(0.4430)
ΔCAPX	-0.0013***	-0.0010***
	(0.0003)	(0.0038)
ΔGM	-0.2654**	-0.2554*
	(0.0322)	(0.0538)
ETR	0.0024	0.0211
	(0.9380)	(0.4470)
LF	0.1139***	0.1785***
	(0.0013)	(<.0001)
ΔLEV	0.0066*	0.0040
	(0.0576)	(0.2543)
GROWTH	0.0312	0.0496
	(0.4458)	(0.2994)
FR		0.1705***
		(<.0001)
N	11,929	10,565
Adj R^2	0.739%	1.881%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 9 - Panel D
Regressions of Buy and Hold Returns on Subsamples 1 through 6

	EQ(19)	*EQ(20)*
DV = BHAR		
Intercept	-0.0150*	-0.0332***
	(0.0605)	(<.0001)
SS_1	0.4187***	0.2627**
	(0.0010)	(0.0349)
SS_2	-0.3164**	-0.2170
	(0.0303)	(0.1451)
SS_3	-1.3840***	-1.3048***
	(<.0001)	(<.0001)
SS_4	-0.1503***	-0.1419***
	(0.0079)	(0.0093)
SS_5	-0.0205	-0.0338**
	(0.1733)	(0.0370)
SS_6	0.2144**	0.1376*
	(0.0150)	(0.0720)
CEPS	0.0850**	0.0337
	(0.0300)	(0.4127)
ΔINV	-0.6371***	-0.8545***
	(0.0019)	(<.0001)
ΔAR	-0.1045	-0.1476
	(0.5133)	(0.4128)
ΔCAPX	-0.0010***	-0.0008**
	(0.0032)	(0.0173)
ΔGM	-0.1883	-0.1955
	(0.1282)	-0.1402
ETR	0.0065	0.0213
	(0.8260)	(0.4358)
LF	0.0757*	0.1487***
	(0.0526)	(0.0003)
ΔLEV	0.0065*	0.0041
	(0.0582)	(0.2406)
GROWTH	0.0523	0.0640
	(0.2044)	(0.1846)
FR		0.1623***
		(<.0001)
N	11,929	10,565
Adj R^2	1.659%	2.478%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 10
Regressions of One-Year-Ahead Change in EPS on Subsamples 1 through 6 Split by Lower and Higher SG&A Ratio

	EQ(21)
DV = CEPS1	
Intercept	0.0468***
	(<.0001)
SS_1_Lower_Ratio	0.2645***
	(<.0001)
SS_1_Higher_Ratio	0.0401
	(0.2293)
SS_2_Lower_Ratio	0.0213
	(0.5311)
SS_2_Higher_Ratio	-0.2150***
	(<.0001)
SS_3_Lower_Ratio	-0.0036
	(0.5172)
SS_3_Higher_Ratio	-0.7641***
	(<.0001)
SS_4_Lower_Ratio	-0.0689***
	(0.0002)
SS_4_Higher_Ratio	0.0068
	(0.5415)
SS_5_Lower_Ratio	0.0091
	(0.1705)
SS_5_Higher_Ratio	0.0019
	(0.1040)
SS_6_Lower_Ratio	0.1765**
	(0.0123)
SS_6_Higher_Ratio	0.0016***
	(0.0001)

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 10 (Continued)
Regressions of One-Year-Ahead Change in EPS on Subsamples 1 through 6 Split by Lower and Higher SG&A Ratio

CEPS	-0.0204**
	(0.0296)
ΔINV	-0.2121***
	(<.0001)
ΔAR	-0.0364
	(0.2392)
ΔCAPX	-0.0003***
	(0.0010)
ΔGM	-0.1729***
	(<.0001)
ETR	-0.0489***
	(<.0001)
LF	-0.0377***
	(<.0001)
ΔLEV	-0.0015
	(0.1707)
Growth	-0.0229***
	(<.0001)
N	38,737
Adj R^2	2.966%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 11
Regressions of Two-Year-Ahead Change in EPS on Subsamples 1 through 6 Split by Lower and Higher SG&A Ratio

	EQ(22)
DV = CEPS2	
Intercept	0.0307***
	(<.0001)
SS_1_Lower_Ratio	0.1140***
	(<.0001)
SS_1_Higher_Ratio	-0.0356
	(0.2259)
SS_2_Lower_Ratio	-0.0014
	(0.9620)
SS_2_Higher_Ratio	-0.1722***
	(<.0001)
SS_3_Lower_Ratio	-0.0040
	(0.1154)
SS_3_Higher_Ratio	-0.2568***
	(0.0003)
SS_4_Lower_Ratio	-0.0406***
	(0.0011)
SS_4_Higher_Ratio	0.0276***
	(0.0090)
SS_5_Lower_Ratio	0.0089
	(0.2287)
SS_5_Higher_Ratio	0.0023**
	(0.0322)
SS_6_Lower_Ratio	0.1223***
	(<.0001)
SS_6_Higher_Ratio	0.0006*
	(0.0950)

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 11 (Continued)
Regressions of Two-Year-Ahead Change in EPS on Subsamples 1 through 6 Split by Lower and Higher SG&A Ratio

CEPS1	-0.1016***
	(<.0001)
ΔINV	0.0118
	(0.7357)
ΔAR	-0.0919***
	(0.0006)
ΔCAPX	-0.0003***
	(<.0001)
ΔGM	-0.0755***
	(0.0002)
ETR	-0.0243***
	(0.0017)
LF	-0.0059
	(0.3222)
ΔLEV	-0.0004
	(0.6528)
Growth	-0.0125***
	(<.0001)
N	33,232
Adj R^2	2.255%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 12
Regressions of Forecast Revisions on Subsamples 1 through 6 Split by Lower and Higher SG&A Ratio

	EQ(23)
DV = FR	
Intercept	0.0934***
	(<.0001)
SS_1_Lower_Ratio	0.1626*
	(0.0616)
SS_1_Higher_Ratio	-0.1246
	(0.2015)
SS_2_Lower_Ratio	-0.0844
	(0.4238)
SS_2_Higher_Ratio	-0.4934***
	(0.0004)
SS_3_Lower_Ratio	-0.4951*
	(0.0640)
SS_3_Higher_Ratio	-0.9354*
	(0.0564)
SS_4_Lower_Ratio	-0.1088*
	(0.0782)
SS_4_Higher_Ratio	0.0858
	(0.2264)
SS_5_Lower_Ratio	0.0865*
	(0.0807)
SS_5_Higher_Ratio	0.0285***
	(0.0005)
SS_6_Lower_Ratio	0.0431
	(0.4111)
SS_6_Higher_Ratio	0.0813
	(0.1072)

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 12 (Continued)
Regressions of Forecast Revisions on Subsamples 1 through 6 Split by Lower and Higher SG&A Ratio

CEPS	0.2289***
	(<.0001)
ΔINV	-0.0549
	(0.6985)
ΔAR	0.0225
	(0.8386)
ΔCAPX	-0.0003**
	(0.0159)
ΔGM	-0.1663*
	(0.0704)
ETR	-0.0420
	(0.2401)
LF	0.0134
	(0.6166)
ΔLEV	0.0026
	(0.3982)
Growth	0.0106
	(0.1898)
N	11,030
Adj R^2	3.293%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 13
Regressions of Buy and Hold Returns on Subsamples 1 through 6 Split by Lower and Higher SG&A Ratio

	EQ(24)
DV = BHAR	
Intercept	-0.0138*
	(0.0848)
SS_1_Lower_Ratio	0.5863***
	(0.0001)
SS_1_Higher_Ratio	0.2899*
	(0.0760)
SS_2_Lower_Ratio	-0.0589
	(0.7274)
SS_2_Higher_Ratio	-0.5021**
	(0.0163)
SS_3_Lower_Ratio	-1.2821***
	(<.0001)
SS_3_Higher_Ratio	-1.5822***
	(0.0004)
SS_4_Lower_Ratio	-0.1826***
	(0.0032)
SS_4_Higher_Ratio	-0.1388**
	(0.0472)
SS_5_Lower_Ratio	0.0863
	(0.1594)
SS_5_Higher_Ratio	-0.0257*
	(0.0550)
SS_6_Lower_Ratio	-0.0163
	(0.8365)
SS_6_Higher_Ratio	0.3089***
	(0.0031)

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 13 (Continued)
Regressions of Buy and Hold Returns on Subsamples 1 through 6 Split by Lower and Higher SG&A Ratio

CEPS	0.0716*
	(0.0783)
ΔINV	-0.6526***
	(0.0015)
ΔAR	-0.0939
	(0.5592)
ΔCAPX	-0.0010***
	(0.0036)
ΔGM	-0.1818
	(0.1494)
ETR	0.0097
	(0.7436)
LF	0.0871**
	(0.0274)
ΔLEV	0.0066*
	(0.0569)
Growth	0.0569
	(0.1691)
N	11,929
Adj R^2	1.870%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 14
Regressions of Buy and Hold Returns on Subsamples 1 through 6 Split by Lower and Higher SG&A Ratio

	EQ(25)
DV = BHAR	
Intercept	-0.0330***
	(<.0001)
SS_1_Lower_Ratio	0.3129**
	(0.0429)
SS_1_Higher_Ratio	0.2247
	(0.1662)
SS_2_Lower_Ratio	-0.0705
	(0.7043)
SS_2_Higher_Ratio	-0.3321
	(0.1202)
SS_3_Lower_Ratio	-1.3311***
	(<.0001)
SS_3_Higher_Ratio	-1.2887**
	(0.0155)
SS_4_Lower_Ratio	-0.1575**
	(0.0109)
SS_4_Higher_Ratio	-0.1356**
	(0.0472)
SS_5_Lower_Ratio	0.0939
	(0.1238)
SS_5_Higher_Ratio	-0.0408***
	(0.0014)
SS_6_Lower_Ratio	-0.0414
	(0.5482)
SS_6_Higher_Ratio	0.2285***
	(0.0051)

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 14 (Continued)
Regressions of Buy and Hold Returns on Subsamples 1 through 6 Split by Lower and Higher SG&A Ratio

CEPS	0.0284
	(0.5072)
ΔINV	-0.8883***
	(<.0001)
ΔAR	-0.1412
	(0.4397)
ΔCAPX	-0.0008**
	(0.0183)
ΔGM	-0.1785
	(0.1837)
ETR	0.0244
	(0.3695)
LF	0.1545***
	(0.0002)
ΔLEV	0.0041
	(0.2414)
Growth	0.0679
	(0.1644)
FR	0.1603***
	(<.0001)
N	10,565
Adj R^2	2.622%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 15
Regressions of One-Year-Ahead Change in EPS on Subsamples 1 through 6 Split by Smaller and Larger Change in the SG&A Ratio

	EQ(26)
DV = CEPS1	
Intercept	0.0668***
	(<.0001)
SS_1_Smaller_Change	1.7442***
	(<.0001)
SS_1_Larger_Change	0.2008***
	(<.0001)
SS_2_Smaller_Change	0.1463*
	(0.0655)
SS_2_Larger_Change	-0.0597**
	(0.0351)
SS_3_Smaller_Change	-0.8700***
	(0.0022)
SS_3_Larger_Change	-0.0137
	(0.3784)
SS_4_Smaller_Change	-2.1925***
	(<.0001)
SS_4_Larger_Change	-0.0295**
	(0.0127)
SS_5_Smaller_Change	-0.2713***
	(<.0001)
SS_5_Larger_Change	0.0018
	(0.1245)
SS_6_Smaller_Change	0.5981***
	(0.0002)
SS_6_Larger_Change	0.0016***
	(0.0001)

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 15 (Continued)
Regressions of One-Year-Ahead Change in EPS on Subsamples 1 through 6 Split by Smaller and Larger Change in the SG&A Ratio

CEPS	-0.0103
	(0.2594)
ΔINV	-0.2297***
	(<.0001)
ΔAR	-0.0279
	(0.3672)
ΔCAPX	-0.0003***
	(0.0020)
ΔGM	-0.1614***
	(<.0001)
ETR	-0.0488***
	(<.0001)
LF	-0.0472***
	(<.0001)
ΔLEV	-0.0015
	(0.1729)
Growth	-0.0230***
	(<.0001)
N	38,737
Adj R^2	2.705%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 16
Regressions of Two-Year-Ahead Change in EPS on Subsamples 1 through 6 Split by Smaller and Larger Change in the SG&A Ratio

	EQ(27)
DV = CEPS2	
Intercept	0.0376***
	(<.0001)
SS_1_Smaller_Change	0.9131***
	(<.0001)
SS_1_Larger_Change	0.0483**
	(0.0415)
SS_2_Smaller_Change	-0.0884
	(0.1992)
SS_2_Larger_Change	-0.0750***
	(0.0019)
SS_3_Smaller_Change	-0.2920
	(0.2418)
SS_3_Larger_Change	-0.0066
	(0.2038)
SS_4_Smaller_Change	-0.9263***
	(<.0001)
SS_4_Larger_Change	0.0034
	(0.6509)
SS_5_Smaller_Change	0.0475
	(0.3566)
SS_5_Larger_Change	0.0023**
	(0.0329)
SS_6_Smaller_Change	0.5171***
	(0.0006)
SS_6_Larger_Change	0.0006
	(0.1008)

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 16 (Continued)
Regressions of Two-Year-Ahead Change in EPS on Subsamples 1 through 6 Split by Smaller and Larger Change in the SG&A Ratio

CEPS1	-0.1003***
	(<.0001)
ΔINV	0.0027
	(0.9390)
ΔAR	-0.0863***
	(0.0014)
ΔCAPX	-0.0003***
	(<.0001)
ΔGM	-0.0644***
	(0.0013)
ETR	-0.0238***
	(0.0021)
LF	-0.0113*
	(0.0597)
ΔLEV	-0.0004
	(0.6843)
Growth	-0.0124***
	(<.0001)
N	33,232
Adj R^2	2.167%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 17
Regressions of Forecast Revisions on Subsamples 1 through 6 Split by Smaller and Larger Change in the SG&A Ratio

	EQ(28)
DV = FR	
Intercept	0.0942***
	(<.0001)
SS_1_Smaller_Change	0.7363***
	(0.0033)
SS_1_Larger_Change	-0.0093
	(0.9069)
SS_2_Smaller_Change	-0.2170
	(0.3050)
SS_2_Larger_Change	-0.3055***
	(0.0020)
SS_3_Smaller_Change	-2.9953***
	(0.0049)
SS_3_Larger_Change	-0.5319**
	(0.0319)
SS_4_Smaller_Change	-0.7565**
	(0.0272)
SS_4_Larger_Change	0.0334
	(0.5243)
SS_5_Smaller_Change	0.2305
	(0.1374)
SS_5_Larger_Change	0.0317***
	(0.0004)
SS_6_Smaller_Change	0.6567
	(0.1556)
SS_6_Larger_Change	0.0670*
	(0.0825)

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 17 (Continued)
Regressions of Forecast Revisions on Subsamples 1 through 6 Split by Smaller and Larger Change in the SG&A Ratio

CEPS	0.2399***
	(<.0001)
ΔINV	-0.0790
	(0.5762)
ΔAR	0.0285
	(0.7959)
ΔCAPX	-0.0003**
	(0.0387)
ΔGM	-0.1491
	(0.1026)
ETR	-0.0417
	(0.2427)
LF	0.0025
	(0.9246)
ΔLEV	0.0027
	(0.3778)
Growth	0.0082
	(0.3022)
N	11,030
Adj R^2	3.257%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 18
Regressions of Buy and Hold Returns on Subsamples 1 through 6 Split by Smaller and Larger Change in the SG&A Ratio

	EQ(29)
DV = BHAR	
Intercept	-0.0162
	(0.1513)
SS_1_Smaller_Change	1.7140***
	(0.0012)
SS_1_Larger_Change	0.3905***
	(0.0027)
SS_2_Smaller_Change	-0.5632**
	(0.0500)
SS_2_Larger_Change	-0.2921*
	(0.0642)
SS_3_Smaller_Change	-3.5635***
	(0.0001)
SS_3_Larger_Change	-1.3084***
	(<.0001)
SS_4_Smaller_Change	-0.7582
	(0.2168)
SS_4_Larger_Change	-0.1463***
	(0.0088)
SS_5_Smaller_Change	0.1969
	(0.3406)
SS_5_Larger_Change	-0.0204
	(0.1739)
SS_6_Smaller_Change	2.2399***
	(<.0001)
SS_6_Larger_Change	0.2064**
	(0.0174)

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 18 (Continued)
Regressions of Buy and Hold Returns on Subsamples 1 through 6 Split by Smaller and Larger Change in the SG&A Ratio

CEPS	0.0814**
	(0.0376)
ΔINV	-0.6369***
	(0.0018)
ΔAR	-0.0953
	(0.5512)
ΔCAPX	-0.0010***
	(0.0066)
ΔGM	-0.1866
	(0.1324)
ETR	0.0085
	(0.7747)
LF	0.0700*
	(0.0726)
ΔLEV	0.0067*
	(0.0506)
Growth	0.0555
	(0.1783)
N	11,929
Adj R^2	1.906%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 19
Regressions of Buy and Hold Returns on Subsamples 1 through 6 Split by Smaller and Larger Change in the SG&A Ratio

	EQ(30)
DV = BHAR	
Intercept	-0.0317***
	(0.0049)
SS_1_Smaller_Change	1.5722***
	(0.0037)
SS_1_Larger_Change	0.2425*
	(0.0580)
SS_2_Smaller_Change	-0.5359*
	(0.0776)
SS_2_Larger_Change	-0.1738
	(0.2808)
SS_3_Smaller_Change	-2.8273***
	(0.0031)
SS_3_Larger_Change	-1.2407***
	(<.0001)
SS_4_Smaller_Change	-0.8756
	(0.1587)
SS_4_Larger_Change	-0.1395***
	(0.0098)
SS_5_Smaller_Change	0.1855
	(0.3933)
SS_5_Larger_Change	-0.0338**
	(0.0351)
SS_6_Smaller_Change	2.0249***
	(<.0001)
SS_6_Larger_Change	0.1297*
	(0.0870)

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.

TABLE 19 (Continued)
Regressions of Buy and Hold Returns on Subsamples 1 through 6 Split by Smaller and Larger Change in the SG&A Ratio

CEPS	0.0326
	(0.4283)
ΔINV	-0.8488***
	(<.0001)
ΔAR	-0.1432
	(0.4271)
ΔCAPX	-0.0008**
	(0.0273)
ΔGM	-0.1946
	(0.1429)
ETR	0.0240
	(0.3804)
LF	0.1412***
	(0.0005)
ΔLEV	0.0043
	(0.2128)
Growth	0.0673
	(0.1628)
FR	0.1581***
	(<.0001)
N	10,565
Adj R^2	2.705%

***, **, * denotes statistical significance at <.01, <.05 and <.10 levels, respectively, for two-tailed tests. P-values provided in parentheses.